

VIRGINIA WILDLIFE

OCTOBER 1982

ONE DOLLAR



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Decoys by Carmelo Cianco, Laurel, Maryland.
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Letters

Three Cheers

I would like to congratulate the people of *Virginia Wildlife* magazine for one very beautiful publication. You do an honor for the Commonwealth of Virginia. Keep up the good work.

W.D. Mills
Alexandria

I am a native Virginian stationed in West Germany. I would like to take this opportunity to thank you all for the enjoyment and pleasure I receive every month with the arrival of your magazine. Being so far away from my home in Prince George County, your magazine is a great comfort to me and my fellow soldiers. The stories are excellent and your pictures are really fantastic. With each new issue, I count the days until I return home to family and friends and our beautiful state, Virginia.

You make me proud to be a Virginian.

Gary W. Davis
APO New York

This soldier's tour of duty ended last month, and we assume he's back in Virginia now—welcome home, Gary, and thanks for writing.—Managing Ed.

I knew it all the time, but I'm really happy for you that the Association for Conservation Information has recognized the fact that *Virginia Wildlife* is No. 1!

Congratulations and best wishes to you and your staff. Keep up the good work.

J.B. Jackson
Council on the Environment
Richmond

Thank you! Readers, see page 29 to find out what J.B. is talking about.—Managing Ed.

Subscription Premium

In 1980 and 1981 you ran a subscription offer—get 10 subscriptions and you get a gift. These last two years, I have done so, and have not received your gifts. I am questioning whether to get

new subscriptions now.

James M. Webb
Concord

A friend of ours gave us some old *Virginia Wildlife* magazines and on the outside of the November 1980 issue was a full-size picture of some quail which I sure would love to have.

Is there any way I could get this picture now?

Mrs. J.F. Seymore
Orange

Both of these letters refer to our annual Christmas gift subscription drive featuring a premium for the donor, such as a limited edition wildlife print.

As the information on the envelope/order form states, the supply of these subscription premiums is limited, and each year we run out of the gift soon after it is advertised. We'll offer a print again this year, so order yours using the special envelope provided in next month's (November 1982) issue of *Virginia Wildlife*, and do it as soon as you get that issue of the magazine to improve your chances of receiving the gift. Of course, even without the print, you are still offered the opportunity to give *Virginia Wildlife* to 10 of your friends at an unbeatable price!—Managing Ed.

Complaint Department

I have been an avid reader of your fine magazine for approximately 18 years. One of my favorite features has been the column, "It Appears to Me," by "Curly."

I was greatly disappointed to read that your August issue would be the final edition of this column to be published. What has happened? Did Curly leave for parts unknown? I certainly hope not.

Curly's subtle humor and little tid-bits of information have been most enjoyable and helpful. I hope we can look forward to seeing its continued publication.

David E. Blain
Chester

We knew there would be some disappointed

readers when we decided to cease publishing "It Appears to Me." It's an occupational hazard for editors, when we make decisions that effect some change in a magazine's tradition, that virtually every one of those decisions is going to make someone unhappy.

Space is always at a premium in *Virginia Wildlife*, and one thing we found lacking in the magazine's make-up was a regular feature on non-game wildlife. So we had to remove one thing to make room for another. And since we believed that we could include at least some of the things that made "Curly" Satterlee's column such a popular and useful one elsewhere in the magazine, "It Appears," unfortunately, had to be discontinued. We'll do our best to keep you posted on those things that Curly always did—new publications, books, maps and such—in "Outdoor Notebook."

Don't worry: Curly is still with us, and you will continue to find him on the "Personalities" page each month.—Managing Ed.

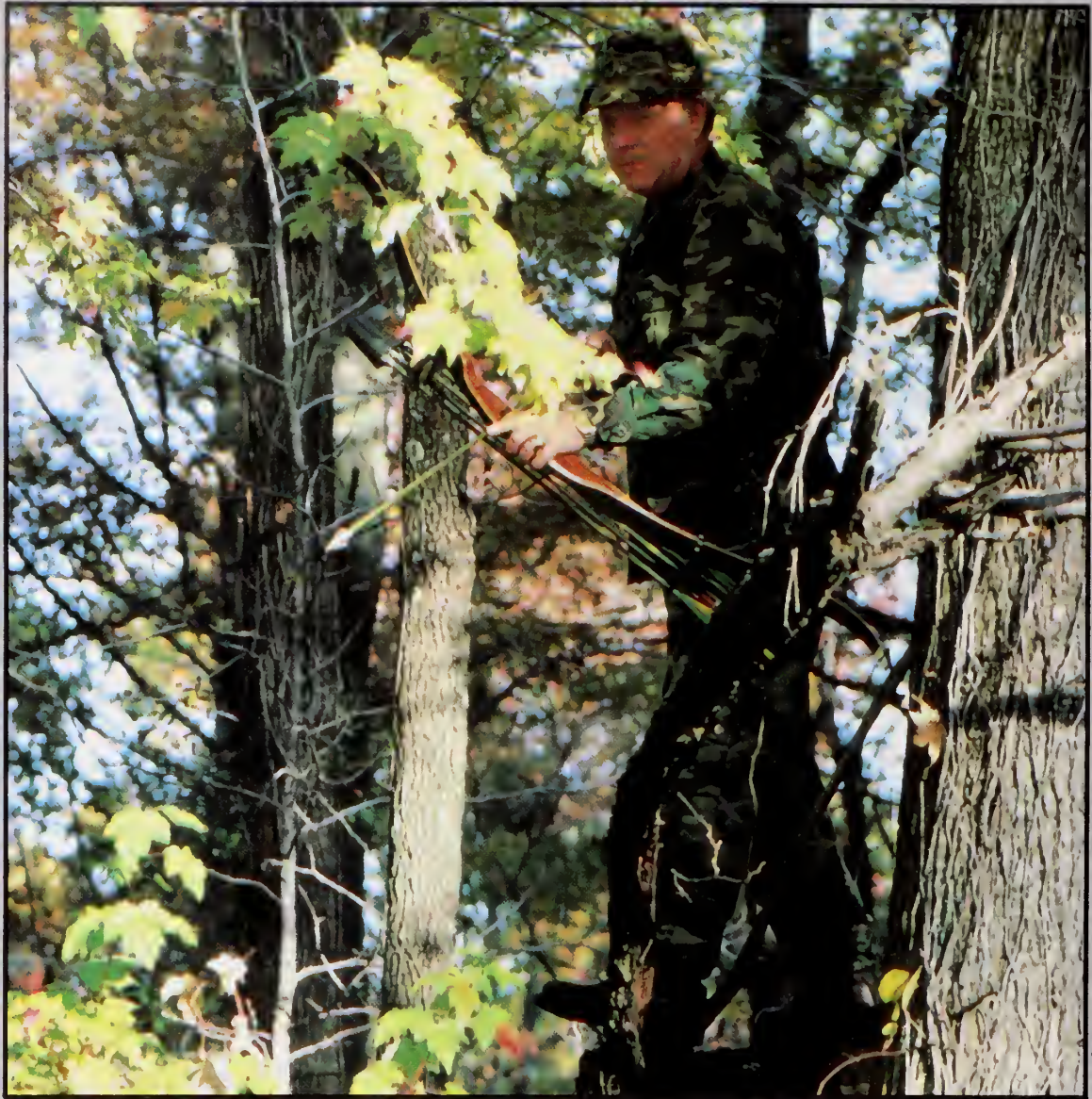
The Ladyslipper Mystery

I am writing in regard to the white ladyslippers mentioned in the Letters section of the July 1982 issue of *Virginia Wildlife*.

The white ladyslipper (*Cypripedium candidum*) is essentially a species of the midwestern prairies and marly wet open meadows. This rare species has been found in New York, northern Pennsylvania, and New Jersey but never in Virginia. Occasionally the pink ladyslipper (*Cypripedium acaule*) occurs with a white flower and I would assume that the people refer to one of these anomalies. . . The bud of all pink ladyslippers is white and on several occasions I have had people report "white ladyslippers" to me based on the unopened bud.

If Mr. and Mrs. Downing have plants with leaves along the stem, I should like a photo of the plant as this would be a very unlikely disjunct population.

Robert C. Simpson
Stephens City



Gary Gaston

You Can't Buy **SUCCESS**

But you can give yourself the edge by sifting through bowhunting equipment and learning the difference between what's nice to have and what's essential.

by Mike Benedetti



photos courtesy of Bear Archery

(Top photo) The conventional bow, left, is the preference of "purists" although the compound bow, right, has its advantages; both will harvest game, so the choice is matter of individual taste. (Bottom photo) One of the most popular pieces of optional equipment for the bowhunter is a tree stand.

Talk to any two bowhunters about equipment and undoubtedly you will get as many opinions. Flip through an archery catalogue and you might think you have to take a second mortgage to afford the necessary equipment. The archery market today is flooded with equipment, each manufacturer claiming that his product is the bowhunter's answer to quick, easy success. It's no wonder that there are serious philosophical arguments among bowhunters about the proper equipment needed. Many archers are being lead to believe that success can be bought. But if it's instant success that you're after, save your money. Bowhunting will not offer it, no matter how much equipment you buy.

Still, equipment is extremely important and can be a confusing part of this sport. Separating what you *need* from what is *nice to have* can be an enigma for the novice. The equipment discussed here is essential, unless otherwise noted.

As you would expect, the first piece of equipment you will need is a bow. The three main choices at this time are the longbow, recurve, and compound. Any of these bows will harvest game. Many beginners feel they must start out with a compound to be well equipped. This is not so. In fact, there is a trend today toward the recurve and longbow. The "purists" believe that these bows offer the true challenge. There is no doubt that the compound offers advantages over the longbow and recurve. The biggest advantage is that a compound bow makes use of eccentric wheels in such a way that a 60-pound pull bow reduces its holding weight, at full draw, by some 30 to 50 percent. Thus, a 60-pound pull bow with a 50 percent let-off would drop off to 30 pounds. This, in turn, allows the shooter to hold longer and more steadily. A compound bow is also more efficient in that it converts more of its stored energy into actual force applied to the arrow. When the compound first came out, there were extraordinary claims made about its powers. Many of these claims were grossly exaggerated, or simply were not true. A compound will not give instant accuracy or success.

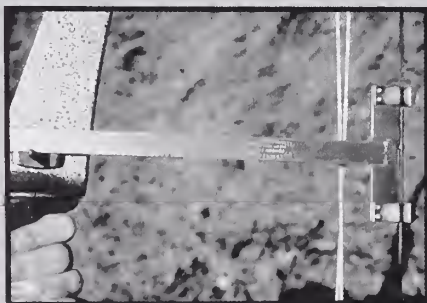
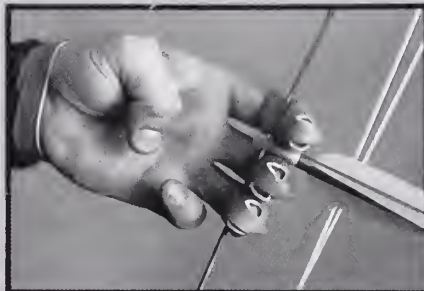
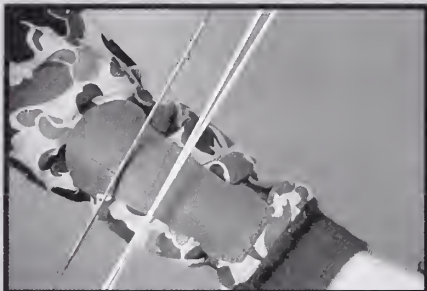
A bow that is used for hunting should, as an absolute minimum, be in the 40-pound range. However, a person using a bow this light should be very careful of the types of shots he takes and at what distances. In many bowhunting circles, a 50-pound bow is considered light. The best rule for the bowhunter is to use the heaviest bow that he can shoot accurately. Don't make the mistake of buying a bow you can't handle properly. You will have a bow that could kill a moose; the trouble is you couldn't hit one at 10 yards.

A nice feature about compounds is that most come with adjustable weight ranges. A typical bow can be adjusted from 50 to 60 pounds. Many have even wider weight ranges. This allows you to work yourself into shape until you can handle the heavier weights.

Bow strings should be suitably strong to handle the weight you shoot. Bows will come with strings that can handle their full recommended weight ranges. It is a good idea to have a replacement string handy. Make sure your extra string has the proper number of strands to handle your bow's weight. Whenever your string starts getting frayed or has broken strands, replace it. A string that breaks could cause bow limbs to crack or break. Injury to the shooter is another possibility.

Don't ever pull the string back on a bow and release it without shooting an arrow. The force from dry firing your bow is enough to damage the limbs. Keep your string waxed. Bow string wax will help prevent damage to your string. Wax also helps keep your string from getting water-logged on rainy days. When applying the wax, take your thumb and forefinger and rub the string fast enough to heat the wax. This will melt it between the strands and better protect the string.

A nocking point must be located on the string. This ensures that the arrow is placed at the correct point on the string for each shot. The nocking point is usually located level to a half inch above the arrow rest. A bow square is invaluable



(Top photo) A bowquiver that properly covers broadheads is essential.

(Center left) The armguard prevents the string from catching your clothes as it passes your arm.

(Center right) A glove will protect your fingers as you shoot.

(Bottom left) A bow square helps insure that you properly locate the nocking point.

(Bottom right) A nocking point must be located on the the string

for correctly finding the nocking point. If the nocking point is too high or too low, the tail end of the arrow leaves the bow too high or too low. This will cause stability problems and cause improper arrow flight. You will have to shoot a few arrows in order to establish the correct position for you and your equipment.

You should place silencers on the string, as well. If you use a compound, put silencers on the cables, too. A fast hunting arrow travels about 200 feet per second. Sound travels about 1,090 feet per second. Believe it or not, a whitetail, even at short ranges, can react fast enough to cause a miss. Silencers quiet a bow enough to greatly decrease the chances of a deer "jumping the string."

A few years ago, almost everyone used the bow shelf for an arrow rest. Now, it's an accepted practice to use a rest attached to the bow's sight window, mainly because the fletching does not touch the shelf as it leaves the bow. The advantage here is that there is less interference with the arrow to cause inconsistencies in its flight. This is especially true for people who use plastic fletching on their arrows. This fletching does not give like feathers do, so it reacts poorly when going over the shelf. The hunter should stay away from rests that look like they could be bent or broken easily. It's a good idea to have a spare rest handy just in case something unexpected happens. It's also a good idea to put some moleskin on the shelf. That way, if you happen to get excited for some reason, and the arrow falls off the rest and strikes the shelf, you will be less likely to frighten all the creatures in the woods.

Another necessity is the bowquiver. The most important requirement for a quiver is that it properly cover the broadheads. A bowhunter who walks around with improperly covered broadheads is asking for serious trouble. A razor sharp broadhead can do a great deal of damage quickly. Treat sharp broadheads with respect.

An optional item you will find on many bows is a sight. Again, be wary of anyone promising to sell you success. A strong point in favor of a bowsight is

that under the pressure of a shot, you do not have to rely strictly upon visualizing a spot on the deer to shoot at. With a sight, the pin goes on the spot you want to hit. A bowhunter's philosophy about gadgets will be put to the test with sights. Use what equipment you think you need. But be careful of trying to "buy" your deer. It is not a disgrace to miss one. We are human and nothing is guaranteed. The best way to avoid missed shots is to limit your shots to your own range of accuracy.

The Indians spent more time and care in the selection and the making of their arrows than on any other piece of equipment. They realized that without good arrows, accurate shots are impossible. Today, having proper arrows is not particularly difficult as long as certain key items are given their due. First of all, there are three basic materials that arrows are made of: wood, fiberglass and aluminum. Wood arrows are the most inexpensive, but they can warp. Fiberglass is durable, but it's heavy. Aluminum is not as durable as fiberglass; but aluminum allows greatest accuracy. It also is the most expensive type. The material you choose is up to you. The important thing is to match your arrows to you and your bow. The length of your arm dictates your draw length. Draw length is the length of the arrow measured from where the nock touches the string to the front of the sight window. Add one inch to your arrow for broadhead clearance. The spine of the arrow is important, too. Spine refers to the stiffness of an arrow. When you release the string, the bow applies force to the arrow. The more poundage the bow, the more force. The more force, the stiffer the arrow you need. If your arrow is underspined (not stiff enough), the arrow bends too much as it leaves the bow. This causes poor arrow flight, and in turn, inaccurate shots. An underspined arrow could even break and cause serious injury to the shooter. A too-stiff arrow will not bend enough and inaccurate shots will result. In general, it is easier to get an overspined arrow to fly more accurately than an underspined one.

A few years ago, the trend was to use light arrows for faster speed. But in hunting, penetration is what counts. Penetration is a factor of both speed and weight. The heavier an arrow, the more energy it can store, thus greater penetration. Choose an arrow made for the peak weight of your bow. Don't be misled into buying too light an arrow.

A key piece of equipment is the broadhead. Most broadheads will weigh between 115 and 160 grains. The only way to match your broadhead to your equipment is to shoot it and see how it flies. Broadheads and field points of the same weight will not fly alike because they are different aerodynamically. Most broadheads will have from two to four blades. A two-blade head can weigh as much or more than a four-blade head. The size of a two-blade head can also be as big or bigger than a four-blade, so check them out before buying. Broadheads with factory-sharpened, replaceable blades are popular today. After a shot, new blades are simply placed in the head. These blades are ideal for people who can't or don't want to take the time to get their heads razor-sharp. Some hunters feel that sharpening their broadheads is a part of the hunt and prefer to do it themselves. Make your own choice, but make sure that you hunt with razor-sharp heads. A dull broadhead pushes its way around veins and arteries rather than slicing through them. A dull broadhead causes far less blood loss and will cause lost deer.

You will need something to protect the fingers that hold the string when you shoot. The two most popular items for hunters are the shooting glove and tab. These are standard items and selection of a good one is not difficult.

You will also need an armguard. This prevents the string from catching your clothes as it passes by the arm that holds the bow. Armguards also are easily found and most of the ones around are good. If you use a recurve, it is also a good idea to use a string changer. This is much safer and easier than trying to string a bow without one. And if you twist the limbs, you can damage your bow.

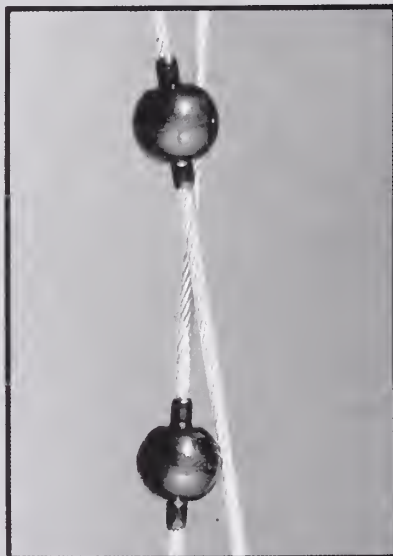
A blaze orange vest is an essential item if you bowhunt during gun season. If you do not wear a vest to and from your stand, you are asking for trouble. It's not much trouble to slip the vest off when reaching your stand, especially when you think of how well they show up in a rifle scope. Once in the stand, a strip of blaze orange tied around your tree will alert other hunters but not the deer.

A compass is another important piece of equipment. You may hunt in the same piece of woods all the time, but introduce cloudiness or darkness into the situation, or track a deer and forget to take landmarks, and you can get turned around quickly. With a compass you always know your directions. Also, you will be able to walk a straight line. Now, walking a straight line may seem easy enough, but once you lose your orientation and get a little nervous, it is actually easier to walk in circles than in a straight line.

A well-prepared bowhunter should also carry a knife. Don't buy one big enough to chop down trees, but don't choose one that's too small, either. Choose any style you like, but carry one. Let's hope you'll need it to ensure your venison dinners taste as good as possible.

Carry a flashlight with you, as well. It's surprising how dark the woods can get. It also could be rather frustrating to try to use your compass and not be able to see the direction indicator. Of course, night tracking will be impossible without some light. Some bowhunters carry two lights with them: a small AA light for going to and from the stand, to keep the unnatural light to a minimum, and a normal two D flashlight for when more light is needed. If you only carry one light, carry the larger flashlight. A light can also be used at dusk to let other hunters know that you are not game leaving the woods.

The bowhunter who can consistently get 20 yards from a whitetail is the one who will be able to give you the best advice on how to cook venison. In order to get that close to a deer, undetected, proper camouflage is a must. Deer are



(Top) An arrow rest is attached to the bow's sight window.

(Center) Silencers; a deer can hear a bowstring that hasn't been quieted with these, and can actually react quickly enough to elude your shot.

(Bottom) Sharp broadheads are essential.

colorblind; but they are aware of contrasts. A light figure on dark stands out like a sore thumb. The bowhunter should mix light and dark colors in such a way that he blends with his background. Camouflage for the bowhunter includes bow, quiver, clothes, gear and, equally important, the hands and face. Cotton gloves with the three string fingers cut out work great for the hands. A headnet or camo cream does fine for the face and neck. Remember, though, that wearing camouflage means a certain amount of risk—refer to the earlier suggestion to wear a scarf or some strip of blaze orange around your neck. The debate over blaze orange versus camouflage is one that eventually comes down to individual choice. Blaze orange clothing is not required by law in Virginia, but you should weigh the pros and cons of blaze orange and camouflage and make your own well-informed decision.

One of the most popular optional items in use is the treestand. They are popular for a good reason. They work. Treestands not only get you above a deer's normal line of sight, they also get your scent up where it is more easily carried off. These are two big advantages when you are trying to get 20 yards from a whitetail. Use portable treestands if you decide to use a treestand. Permanent stands tend to ruin trees, chainsaws, and landowner-hunter relations. They also let everybody in the woods know where you shot your eight-pointer.

Also, there is the problem of having to build another stand if the deer shift as little as 10 yards. Be certain the stand you buy is well built and offers stability. More accidents happen around the treestand than any other place. If you choose to hunt out of a treestand, it is *not* optional to use a safety line to tie yourself in. There also are safety belts made for treestand hunters that work well. If you tie yourself in, use a bowline knot. This knot will not tighten on you if you fall. Never go up or down your treestand while holding your bow. Use a hauling line to pull your bow up and let it down. If you tie knots in your hauling line at

different heights, you can use this to tell how high you are in your treestand. I feel more secure when I tie myself in. In turn, I feel more at ease about taking shots in different directions. By the way, a piece of carpet on the bottom of the stand makes it easier on the feet and quiets movement.

No matter where you hunt, give some thought to safety equipment. A whistle can be heard a long way off and is a lot easier to use than your voice. Some bandages and matches could come in handy, too. A few aspirin could mean a more enjoyable time in the woods. If you hunt in snake country, a snake bite kit is in order. Where you hunt will make a big difference in what safety gear you take. Give safety some thought before you go hunting. It could save you a lot of trouble—maybe even your life.

An optional piece of gear that is hard to beat is a "fanny pack." It is amazing how much gear you can stuff into one of these packs. By using a fanny pack, you free up your pockets and don't overstuff them. And, you are less likely to drop something, rather convenient if you're hunting out of a tree. Further, you reduce the chances of rattling things around. Have you ever tried cramming a rain suit or good-sized flashlight into your pockets? Both will fit into a fanny pack.

Equipment is each bowhunter's own domain. Personal philosophy about bowhunting will dictate many of the types of equipment you use. No matter what your philosophy or income, however, certain basics must be given attention when selecting your equipment. The best way to learn about gear is to take the National Bowhunter Education Course. Beware of those who try to "sell you success." There is no easy way for the bowhunter. Hard work and dedication—not gadgets—will get you your venison dinners. Safe hunting! □

Mike Benedetti of Sandston is a certified instructor in the National Bowhunter Education Program and an associate member in the Professional Bowhunters Society. His article "After the Shot," appeared in last month's issue.

MEMORIES of a Waterfowl Season

Each of the three segments of last year's waterfowl season had something to offer—some of it good, some not.

by Gerald Almy



It was the best of times, it was the worst of times.

Charles Dickens' words from *A Tale of Two Cities* could well have been written to describe the 1981-82 waterfowl season.

Whatever else could be said of the year's hunting, it was unique. That much is sure. The Virginia Commission of Game and Inland Fisheries split the season dates into three segments—one in early October; one from late November into early December; and a third and final segment from late December to January 20. As could be expected, the sport was strikingly different in each waterfowl hunting segment, perhaps moreso than anyone had bargained for.

"The worst of times" was the initial description that would come to the lips. From the prairie potholes and lakes of Manitoba, Saskatchewan and Alberta, the summer survey of waterfowl breeding grounds conducted by the U.S. Fish & Wildlife Service did not bode well. The drought had dried up many choice breeding areas in the northern land of lakes. Waterfowl counts were way down.

And the drought took its toll on hunters' plans, too, when the early October opening rolled around. Hunters who knew of secluded potholes, flooded creek bottoms and secret beaver

ponds in the backwoods hiked to their favorite spots only to find dried, cracked earth, barren, shriveled-up ground.

A riverside pothole I used to hunt where I would routinely find 30 to 60 wood ducks and/or mallards fell victim to the same brutal drought. Normally, I would flush the birds off in small groups, throw out three or four decoys and hunker down in thick weeds adjacent to the pond to watch the drama of decoying ducks. This year, my eyes gazed on parched earth. Like so many wood duck hunters, I was aghast to find my favorite shooting spot existed no more.

Undaunted, resilient hunters made the best of the difficult situation. For though their habitat was temporarily shrunken, the wood ducks didn't appear to be suffering. They were simply that much more concentrated on the remaining waters which weren't dried up.

Getting to them was the only problem! On the Shenandoah, where I often pursue ducks during the early season, float hunting can at times be a productive method. With that in mind, I eased my 10 foot drab-green johnboat into the river one afternoon for a short three-hour float. That's how long it normally took, anyway. "Be back well before supper," I called to my wife, Becky, as she left me at the put-in point.



Before the day was out, another famous quotation would come to mind: "The best laid plans of mice and men do often go astray."

My planned three-hour float turned into a five-hour affair. And it would have been much longer than that, but as the sun set, I pulled my boat ashore before reaching the chosen take-out point, dragged it half a mile up to a farmer's house, and walked the last mile back to my truck!

No water. The river was choked with weeds, the riffles high and dry. The "float" turned out to be a fight the whole way. I hadn't gone half a mile before I realized the folly of my plans and began paddling, pushing, yanking and dragging the boat on its course downstream to try to get out of the river by dark.

That physical exertion might not have been so frustrating, but for the ducks. Getting up 100 to 200 yards in front of me, they rose in great flocks, raucously squealing and quacking as they took off and winged downriver. One lone woodie drake out of perhaps 150 ducks encountered got up within range. I bagged him with a lucky shot from the 12-gauge double.

Clearly, floating was not the way to harvest river ducks this year, I concluded when I finally arrived home late that night. Jump shooting would be the key. The following day proved that this was a better approach, as a pair of colorful drake woodies fell when I flushed a group of about 30 ducks preening themselves at a riffle on a sun-baked river. Later that morning, I stalked a small wooded creek. There a lone black duck flushed noisily at a bend in the stream and collapsed as my double bellowed twice.

But the pond proved most astounding. It's not much more than an acre. But situated, as it is, at the edge of a cornfield and surrounded with hardwoods, it's too inviting for woodies to pass up. And that was especially true this year, with so many of their favored beaver ponds and swamps withered away.

I could hear them before I even got close enough to see: squealing and fluttering their wings as they preened themselves and scrapped over choice positions on a sunning log.

Inching to within 30 yards, I detected nervousness among the fowl and rose quickly. The 20-odd ducks exploded off the water. Covering a drake, I slapped the trigger and quickly followed up on another late riser as birds flew everywhere. But when my nerves calmed and I went to retrieve the ducks,



(Photo, page 9) Guide returns to blind after setting out decoys. (Facing page) Scanning the skies for incoming ducks. (This page, top photo) Snow geese. (Above) Firing at incoming ducks at sunrise.

I was aghast to find four woodies! A limit with two shells. The birds has been so tightly clustered, two had flown into the shot patterns and been downed inadvertently. It was pleasing to have a limit of tasty wood ducks, but I'd much rather have had to work hard for my last two ducks, rather than getting them so fortuitously.

When the second segment of the season rolled around in late November, river and pond jump shooting still proved reasonably productive. Mallards and wary blacks became more prevalent as the woodies and teal departed for warmer climates further south.

Across the state, though, traditional waterfowling with decoys on marshes, lakes and sounds took the forefront. Hunters across the state found greenwing teal, pintail, widgeon, mallard, black and gadwall abundant and the shooting hard to complain about. At Ed Allen's camp on the Chickahominy, hunters were taking limits in 30 to 60 minutes—provided they could shoot straight.

Back Bay hunters found ducks reasonably plentiful during the middle hunting stages, when the weather cooperated. And there was an unusual number of bonus birds, too—fat Canada geese and snows. An aerial survey of the state's goose population flown in December revealed a higher population of Canadas than had ever been recorded at that time of year. Nearly 70,000 were sighted, as opposed to 46,000 at the same time the previous year. The Rappahannock River had 30,000; the James 20,000; the Pamunkey 7,000; the lower Potomac 6,000; Back Bay 1,200; the Eastern Shore 3,000.

A November trip to the Outer Banks provided excellent mid-season shooting for Ranny Isenberg and me. Classic duck weather greeted us as we tumbled out of the motel at 3:45 a.m., sleep still heavy in our eyes. It was cool and breezy; torrential rain pelted the Nags Head beach.

But the wild boat ride through the narrows of John's Ditch and Broad Creek in the predawn darkness woke us up quickly. Soon, our guide Murphy Creef had decoys set and we were into action. Flock after flock of speedy buffleheads set in confidently to the stool. Creef's blonde lab, Bullet, performed beautiful retriever work when our shots flew true.

So fast was the gunning that we had a limit by 8:30 a.m., and spent the remainder of the day photographing waterfowl at the Pea Island Refuge.

When day two of the hunt dawned crisp, clear and windy, we found ourselves accompanying guide Dennis Newbern across Currituck Sound to a marsh blind in quest of dabbling ducks. Thousands of waterfowl traded across the azure winter skies and every so often a group of widgeon, teal, gadwall or blacks would drift in to the 36 duck and goose decoys spread out before us. Twelve ducks were in our three-man bag by the time we headed back for the long drive home to northern Virginia at 3 p. m.

In years past, the final phase of waterfowl hunting in Virginia, with its harsh winds, snows and bitter cold temperatures, was often counted on by experienced waterfowlers to bring the sportiest gunning of the season. Unfortunately, that harsh weather has gotten just a bit too harsh in recent years, painting a grim, frozen picture for the final segment of duck hunting.

Bitter cold temperatures plunged into the state during the final phase of the waterfowl season. Inland ponds and swamps froze early; lakes, streams and rivers followed. Even

the southern extremities of the state were locked in ice. Many Back Bay hunters were frozen out of their blinds, and a permit I had luckily drawn from the Game Commission for Hog Island had to be passed up because there was no open water.

"You can come if you like," said the voice on the phone, "but you'll just be wasting your time. All the blinds are frozen in tight."

Large stretches of our state's major rivers were locked in ice, and floating was out of the question. By mid-January, I had just about written the season off for the year. Only three legal hunting days remained. The Shenandoah was almost totally solid. But a last minute stroke of good luck lent a dramatic and fulfilling conclusion to my waterfowling year. Driving along a stretch of road near the river one afternoon, I screeched to a halt and did a double-take. Squatting on a huge chunk of snow-covered ice in the river were over a dozen ducks. Nearby, another dozen or so fowl were feeding in an area of open water. Binoculars quickly revealed that they were mallards and blacks for the most part, and one pair of redheads.

I had permission to hunt this area, and soon a brisk half-mile hike had me within roughly 90 yards of the ducks. A perplexing setup faced me then. A wall of briars and brush seemed to block further progress. By easing along as slowly as a cat crouching after prey, I managed to pick, crawl and sneak about 40 yards closer. Here, however, things got entirely too thick to creep any further without getting bloodied up and likely flushing the ducks in the process. Mulling over the situation, I watched, enthralled as the feeding ducks bobbed in the shallow, heads underwater, tails sticking straight up.

If my ammunition had been anything less than 12-gauge, 3-inch magnums with 1½ ounces of lead shot, I would likely have passed up the chance and written off the birds as being too far off to risk shooting at. But with that combination, I decided an accurate shot would do the trick. First, though, I wanted to watch a while longer, and did just that, marveling at the beauty of these strong visitors from the north country.

Finally, several of the birds raised their necks, as if alarmed. "Now or never," I thought, and quickly raised the double. The ducks erupted with wild splashing and raucously flapping wings. Instinctively I covered a bright greenhead and slapped the trigger. A fat mallard drake fell cleanly to the snow-covered ice.

A second shot was possible, but I didn't try one. The season was all but finished. These hardy, strong-willed birds had survived the summer drought, the long migration from Canada, the long days of hunting pressure and a bitter Virginia winter. I silently wished the remainder of the flock well as they gained elevation and headed across the winter skies for some new resting and feeding place on the river.

Sloshing through the frigid water, breaking chunks of ice as I went, I finally reached the drake, plucked it up and headed back to shore. Wet to my waist and shivering, I headed swiftly for the truck and drove home. A hot shower, dry clothes and steaming mug of coffee never felt better than they did that night.

The duck season is all memories now. □

Gerald Almy of Woodstock is a frequent contributor to Virginia Wildlife and other magazines, including Field and Stream and Southern Outdoors.

Attracting Wildlife Neighbors

Here is some practical advice for
developing backyard wildlife
habitat.

by Julie Wyckoff



Leonard Lee Rue

Colorful birds fill the air with their own special music and flit between trees and shrubs. Rabbits hide in tall grass or under shrubs. Squirrels clamor noisily from their tree limb lookouts. A charming scene that you can duplicate. Wildlife is fairly easy to attract; you need only provide them a place to live.

Before you can provide wildlife with a home, you first need to know what habitat is. Habitat varies with different species, however, there are four basic needs common to all wildlife—living space, shelter, water and food.

Living space gives wildlife “elbow room,” a territory they can stake out as their own. Just as a person needs space around them to be comfortable, so does a rabbit or bird need space. The need for space limits the number of birds and animals that will occupy an area, no matter how attractive the habitat. This protects the habitat from being overused and destroyed and the wildlife from being overcrowded. Integrate water, shelter and food into living space to create more useful habitat.

Shelter provides resting space, protection from the weather and predators, and insures a safe nesting place. Its form varies according to different species of wildlife. To woodpeckers, squirrels, raccoons, and other tree dwellers, a hollow tree is a cozy home. To rabbits, tall grass and brush are ideal. Trees and bushes protect many birds. Larger animals such as deer use thickets, brush and heavy foliage. Wildlife

also need shelter to feel secure and comfortable in their homes.

Water is essential for survival of wildlife. Ponds, streams, mud puddles or bird baths are all good water sources. Water does not always have to be in the immediate area but it must be close enough for wildlife to use without undue hardship. Some animals, like deer, can travel greater distances for water than can rabbits or squirrels. Other animals, like muskrats or raccoons, rely on water for their shelter or food source. They will live very close to or in water. Water is a great attractor of wildlife; even a birdbath will enhance an area in their eyes.

Each species of wildlife has its own special needs and preferences when it comes to food. A favored food for one animal may go untouched by another. For example, squirrels love nuts, rabbits munch on grass, weeds and brush and birds eat seeds, berries and insects. This is one way a natural food balance is maintained. A selection of a wide variety of plants and trees can create a year-round food source for many different kinds of wildlife. Supplemental feedings in the winter will attract more wildlife to a backyard and help them make it through times when natural foods are scarce.

Creating or improving wildlife habitat in a yard can be as simple or as complex as you want to make it. You can set up a birdbath, a feeder, and let part of your yard go wild or you can plan and shape your yard into a wildlife environment. If you choose the latter, remember that there are three concepts

EXAMPLES OF BENEFICIAL PLANTINGS FOR WILDLIFE

PLANTINGS	VALUE FOR WILDLIFE
FLOWERS AND GRASSES:	
Sunflower	food for songbirds, gamebirds
Knotweed	food for birds, mammals
Bristlegrass	food for birds, mammals
LOW SHRUBS & VINES:	
Blackberry	food for many birds, deer rabbits
Virginia creeper	food for birds, mammals
Juniper	nesting sites, shelter, food
Greenbrier	food & shelter for birds, mammals
LARGE SHRUBS:	
Autumn Olive	nesting sites, shelter for birds, mammals, food
Elderberry	nesting sites, food
Sumac	food throughout winter, shelter
Multiflora rose	nesting sites, food throughout winter
Firethorn	food for birds
SMALL TREES:	
Dogwood	nesting sites, food
Serviceberry	food
Mulberry	food
Crabapple	food, nesting sites
Hawthorn	food, nesting sites
LARGE TREES:	
Oak, Red & Sugar Maple	food, shelter, nesting sites for birds and mammals
various pines	

RESOURCES:

Cooperative Extension Service
Soil Conservation Service
State Natural Resource Agencies

National Wildlife Federation and state affiliates
National Audubon Society and state affiliates
Local Conservation Organizations



that are important to habitat development: edges, a succession patch and a living brush pile.

An edge is formed when two different areas meet, such as a hedge around a lawn. Edges allow wildlife safe transit between food, shelter and watering areas. The more edges, the more usable habitat there will be for wildlife. The center of a large bare lawn is useless because it is too far from shelter. If the lawn is divided up with patches or edge of flowers, shrubs and other plantlife, the usable habitat area is increased.

Succession is the maturing of an area. Plants increase in size and quantity and often the species change. The succession of plants might be from grass to trees. Improve a large bare lawn with a succession patch by not mowing an area. It will fill in with wild plants and flowers. This provides more shelter and edges. Creating a succession patch by planting the desired trees and shrubs gives more control over the habitat and helps succession start up faster.

A living brush pile is formed when cut brush piled in an area is left alone so that plants naturally go to seed. Birds carry seeds to the brush pile, then drop them while perching. The seeds create plants which provide food and better shelter. Piling brush in an area that has a lot of plants already will hasten the development of a living brush pile.

Use these habitat concepts to create or improve the habitat in your yard or community. There are four steps to follow: inventorying, planning, planting and enjoying.

Before you start creating habitat, find out what already exists in your yard. This will save you time, effort and money. Take a leisurely walk and note on a drawing of your lot where important things are. These include buildings, trees, flowers, bushes—anything that is good for wildlife, immovable or that you simply want to save. Also note areas that are hard to maintain, like a corner that is difficult to mow or an area that grows poor grass. Don't forget to note gardens, woodpiles or rockpiles. Rockpiles can be useful to wildlife, especially if there is shelter in and around them. You will probably not want to create lots of habitat for rabbits near your garden.

Now get creative. Each yard is different and every homeowner has his own ideas on what he would like so there is no one blueprint. Visit nurseries, read books and magazines and talk to people who have developed habitat. When you've got a good idea of the types of plants you'd like and how you want your lot to eventually look, then make another drawing of your yard. Working with your inventory drawing, plan your yard, noting what plants you want to use and where you want them. Since plants and trees grow at different rates, include some fast growing plants for instant habitat. Be sure to use a wide variety of plantings. They will be more disease resistant and will provide a year-round assortment of food and shelter.

Next comes the work. During the appropriate season for your location and plants, plant your selection according to your drawing. Some plants you will want to purchase from a



Julie Wyckoff



Shaping your yard into a wildlife environment involves three concepts that are important to habitat development: edges, a succession patch and a living brush pile.



Leonard Lee Rue

nursery. Conservation organizations are a good source for wildlife plantings at reasonable prices. In other cases, you may be able to transplant seedlings from friends, neighbors or local woods. Obtain permission from the landowner before robbing the woods of natural plants. Be aware that it is illegal to pick or dig up some wild plants as they are protected by law. Also, transplanting kills some wild plants.

If you've planned an extensive program, spread the improvements and plantings over two or three years. In this way you can budget time and money and allow for design changes as you transform your yard.

Don't expect an instant flourishing of wildlife. Your yard will evolve into wildlife habitat rather than become an overnight sensation. As the habitat improves, wildlife will move into their new homes and establish territories. Often there will be a chain reaction; flowers will attract butterflies and other insects which in turn attract birds.

To help wildlife in the beginning of your habitat program, supply artificial feeders, birdhouses and a water source, such as birdbath or artificial pond. Be sure to erect houses that are suitable for the birds you want to attract. Some birds such as wrens and purple martins like houses built just for them. Many other birds will be happy with a simple nesting platform with a roof and one side. When providing supplemental feedings, select feeders and food correct for the wildlife in your area. Don't spoil your good intentions with junk food.

The final step is to enjoy your yard and the wildlife that

choose to live as your neighbors. Wildlife will display their activities year-round, providing entertainment and learning experiences. Find books to help you identify the various species, or capture their antics in photographs. A walk in your yard will turn up all kinds of treasures as you find nesting birds or a rabbit's home tucked into a living brushpile or hidden in tall grass. You will also find that you spend less time mowing your reduced lawn and that the plantings have increased the value of your home.

Encourage your neighbors to follow your example. You may only have a small parcel of land, but when several parcels are added together, a great deal of habitat can be created. A wider range of wildlife will then be attracted, benefitting everyone.

Finally, a few pointers on how to live with your new neighbors. No matter how cute or tame the birds and animals seem, remember that they can be dangerous if not respected as wild animals. A cornered animal is especially dangerous. Avoid touching the wildlife. A partly tamed animal will lose its ability to survive in the wild, or will strike out in fear if you try to be too friendly. Close up your house, especially attic openings. Openings encourage wildlife invasions and animals can be damaging, particularly to wiring and insulation.

Don't be discouraged by the length of time it takes for trees and shrubs to mature. They will provide good habitat long before they reach maturity. Before you know it wildlife will be filling your yard, making all your effort worthwhile. □

Dam Good FISHING

Anglers should not overlook
the fine fishing holes that
beavers build.

by Bob Gooch

Virginia anglers have been fishing impounded waters for generations. In fact, it is about the only fishing many know.

The millponds of yesteryear were legendary, and some of the biggest pickerel around came threshing through their shimmering surfaces. Some of us can remember an old ice pond or two that held a few sunnies. Later there were the huge flood control and hydroelectric impoundments like Buggs Island and Smith Mountain Lake, the city reservoirs such as Lee Hall, and more recently the well-managed lakes of the Commission of Game and Inland Fisheries.

This has been good since natural lakes are rare in Virginia, a major exception being Lake Drummond in the Great Dismal Swamp. Somehow our land was spared the scouring process of the Ice Age which created so many natural lakes.

Impounded waters are usually public waters, and they have been a boon to fishing in the Old Dominion—particularly since World War II.

Dam building has become an engineering speciality, but the most unheralded dam builder in Virginia was almost exterminated along with the deer and wild turkey. Now, it also has made a dramatic comeback, thanks to resourceful wildlife management.

The busy beaver is nature's dam builder. It goes about its work without fanfare, government appropriations, construction permits, or controversy, though an occasional landowner may get upset when he awakes to find this driveway flooded. Unobtrusively, it impounds the waters of creeks and runs, creating some of the finest fishing waters in Virginia.

The beaver is a vegetarian. It has no interest in the fish that are attracted to the still waters it creates, though it lives in harmony with them. Those waters become rich in food as they flood swamps and lowlands, extending considerably the more limited ranges of pickerel, trout, or other stream fish.

"It's a transitional kind of fishing," said Jack Hoffman, chief of the fish division of the Commission of Game and Inland Fisheries. "The fishing is good for awhile, but the ponds eventually silt in. But by then, the beavers have built other

ponds."

Under careful management and regulated trapping, beavers have spread across the state from the slow-flowing creeks and branches of tidewater to the tiny trout streams in the high mountain valleys. There is probably not a rural county in Virginia that does not have at least a half dozen beaver ponds. Many are rarely fished.

Locating beaver ponds is seldom difficult. The animal prefers the smaller streams, the one the average angler can leap across without too much difficulty. And for obvious reasons, it favors wooded streams. Still, I've seen beavers dam streams big enough to canoe—and sometimes in open meadows. The meadow ponds are seldom far from a good supply of alders or other trees and shrubs, however.

An angler-hunter who probes the back country streams and swamps is more likely to uncover good beaver ponds than is the angler who does not hunt. Only those anglers who fish small streams are likely to discover beaver ponds, but scouting for them can be fun and healthy exercise. Just drive the back roads until you locate a good stream or creek, and scout it out. There is no risk of getting lost. Just follow the stream back to your car.

The ponds most distant from the roads will likely furnish the best fishing, but few beaver ponds receive much pressure. Many are on private lands, and with the permission of the landowner, you may be able to drive to some of them.

Beaver ponds vary in size. Some are small, actually confined to the banks of the streams, but others may cover several acres. Most are probably less than an acre, however. Often there is little correlation between the size of the pond and the quality of the fishing.

Considered collectively, a surprisingly wide variety of fish lives in these little impoundments. Generally, they are inhabited by fish native to the streams the dams impound. This often means brook trout in the mountains and chain pickerel and warmouth or other sunfish in the lowlands.

Fishing beaver ponds can present problems. While those in open meadows can usually be fished from the banks, most beaver ponds are lined with trees, alders, or other vegetation



that makes this just about impossible. A better approach is needed.

Many anglers prefer wading. The ponds are rarely so deep that they cannot be waded in hip boots, although chest waders are usually the best choice. The wading angler can get away from the brushy shorelines, and hip-deep in the water, he does not present the high profile that may spook the fish in the usually clear water. If there is water too deep to wade, he can usually reach it by stretching his casts.

During the warm months, the eastern ponds can be waded in sneakers and old trousers, but even then, waders are safer. They protect the feet and legs from stobs, snags, and other underwater hazards.

Another good way to fish those fairly remote ponds, those too far to carry a light boat or canoe to, is from a fishing tube, a canvas-covered inner tube with a saddle for the angler to ride. They are light and easy to pack in. If the water is cold, as in trout country in April, the angler may wear his chest waders, but the tube keeps him afloat so that his feet do not sink into the mucky bottom.

The effective fishing of beaver ponds usually means getting into the water or afloat on it. Fortunately, these options are available to the pond angler.

Locating the fish in a beaver pond is rarely a problem. Unlike the angler fishing a man-made impoundment, the beaver pond angler has no need for fish locators or other electronic gear. He can cover just about every inch of most ponds—from the dam to the headwaters and from the mirror-like surface to the silt-covered bottom.

But there are better ways to locate the fish.

The most obvious way is to watch the surface for signs of feeding fish. This is particularly true early and late in the day. In trout ponds the feeding brookies will dimple the surface, but in the case of pickerel it may mean a sudden swirl as the long-snouted fish goes for a minnow or wayward frog.

Usually, however, the fish are not that evident.

The mouths of tiny feeder streams are always good, although in the case of beaver ponds, this is often the main

stream only. In any event, it is always a good place to expect fish. The stream is constantly bringing food into the pond, and the fish, whether trout or pickerel or sunfish, know it. They gather there to feed.

Though often difficult to locate, springs in the bottom of ponds also attract fish. In clear trout ponds, a break in the weeds that may cover all or part of the bottom usually means the presence of a spring.

During the warmer months, beaver pond fish tend to congregate in the coldest water, usually that just behind the dam. This water should be worked carefully and thoroughly.

Finally, beaver pond fish are no different than fish anywhere else, in that they, too, like the cover of submerged brushpiles, overhanging vegetation, and shoreline weeds. The tiny fish seek these places for protection, and the larger fish hang out there to nab them.

Ultralight spinning tackle is just about ideal for fishing beaver ponds; still, the line should be no lighter than 4-pound test. Not only is there the outside chance of hooking a lunker chain pickerel or a big brookie that will test such a line to the limit, but there is the very real possibility of getting snagged on underwater obstructions when a good fish is being fought. Then, even the 4-pound test line may not be strong enough, but it eliminates some of the risk.

Of course, there is no fishing quite like casting dry flies to dimpling brook trout, but the successful angler will master the roll cast for those situations in which he is backed up against a brushy shoreline. The good fly rod man can handle such a situation, but the spinning angler has an advantage.

As is true of all still waters, the angler has to impart some action to his lure when fishing beaver ponds. Fluttering spoons are good, but there is no current to work the lure, or to give it a natural drift. This, however, is a minor sacrifice to make in return for the chance to fish some of the most productive waters in the Old Dominion.

Those busy beavers build some fine fishing holes. □

Bob Gooch is familiar to readers of Virginia Wildlife; his most recent contribution appeared in last month's special hunting issue, "At the Fork of the Creeks."

Zooplankton

Virginia's amazing water creatures work hard to keep Virginia's sport-fishing waters healthy.

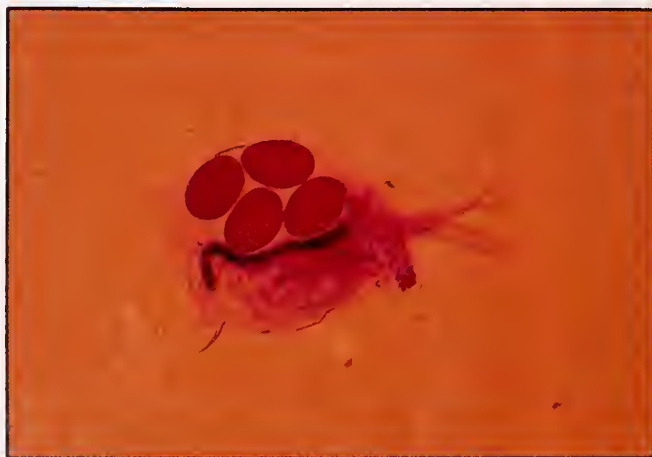
by William Kelso and Louis Helfrich

Each year from mid-spring to late fall, Virginia's fresh water ponds and lakes are alive and teeming with an extraordinary number of seldom seen, little known water animals collectively called zooplankton. Despite their anonymity, these animals are the most abundant and comprise one of the most important groups of underwater animals in Virginia. Planktonic animals (zooplankton) are a group of small aquatic creatures that resemble miniature crabs, shrimp, and clams. They can be found floating, drifting, or swimming in nearly every body of standing water in the state. They range in size from microscopic creatures smaller than a pin head to exceptionally large forms, greater than an

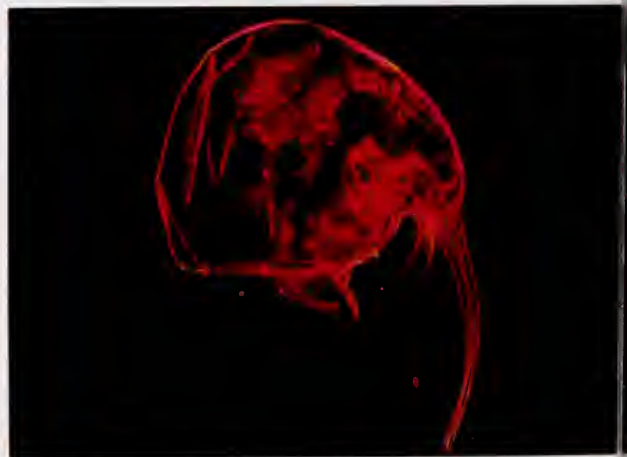
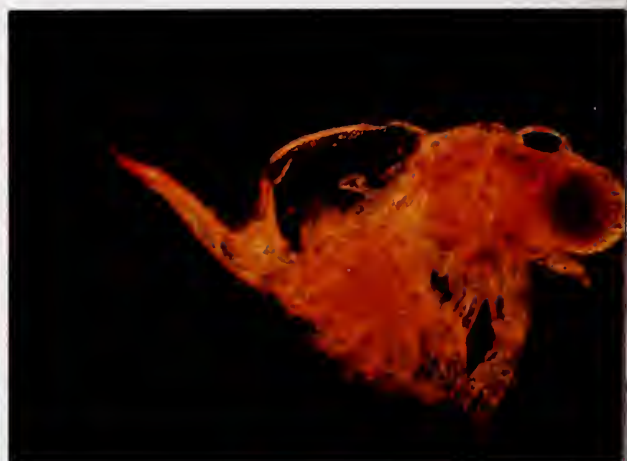
inch in length, that can be easily seen with the naked eye.

To catch a glimpse of these mysterious creatures, simply hold a glass jar containing a sample of pond or lake water to the light. You will soon see an amazing array of colors, shapes, and movements of the zooplankton. Although most are transparent, some are black, brown, green, yellow, or even red depending on the color of algae that they happen to be feeding on. An unusually large number of zooplankton swarming near the surface may be responsible for the strange colors that puzzle pond owners by suddenly appearing and disappearing on warm summer days. At their peak abundance, usually in mid-summer, each quart of pond or lake water can contain as many as 1,500 individual plankton animals.

Despite their small size, these inconspicuous little animals are important inhabitants of Virginia's lakes and ponds. They benefit man in three significant ways. First, zooplankton serve as useful indicators of water quality. For example, certain types of zooplankton are highly sensitive to water pollution and live only in clean waters, whereas other types are tolerant of water pollution and thrive in contaminated waters. Scientists can look at zooplankton samples from a particular pond or lake and make judgements about the prevailing water quality conditions based on the presence or absence of certain types of zooplankton. In fact, because all zooplankton are readily killed by toxic chemicals like insecticides and herbicides, the easiest test for detecting toxic chemicals in pond or lake water is simply to look for the presence or



Common water fleas: (top) *Daphnia* and (bottom) *Ceriodaphnia*.



Common water fleas: (top) *Polyphemus* and (bottom) *Bosmina*.

absence of active, swimming zooplankton.

Second, by feeding on algae and phytoplankton (plant plankton), these animals control water plants which, if left unchecked, multiply rapidly and create the nuisance algae blooms and surface scums that hinder swimmers, boaters, and fishermen. Herbivorous (plant-eating) zooplankters improve water quality by regulating the abundance of algae and other water weeds that severely threaten our use and enjoyment of Virginia's ponds and lakes. Without zooplankton to consume these water plants our lakes and ponds would rapidly fill in, water filters and intake pipes would be clogged, and our drinking water would smell and taste horrible.

Finally, these tiny animals represent the vital food link between water plants and larger aquatic animals. Zooplankton serve as important "middle-men" by eating small water plants (algae and phytoplankton) and, in turn, by being eaten by aquatic insects, amphibians, ducks, and fish. In this way, zooplankton transfer the tremendous amount of energy stored in water plants to animals higher in the food chain.

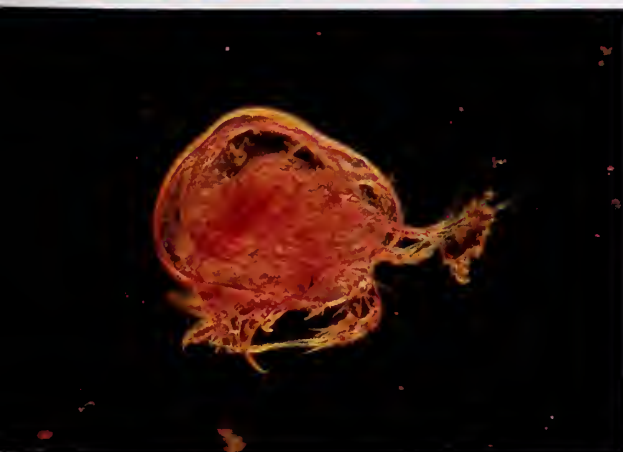
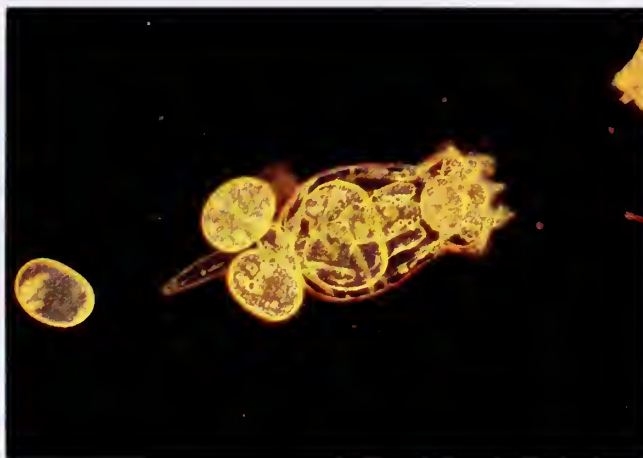
Of primary interest to Virginia sportsmen is the importance of zooplankton as a food source for fish, particularly newly-hatched fish. Soon after hatching, young fish (called larvae) begin feeding on zooplankton. Because fish larvae are very small (less than 1/4 of an inch long), tiny zooplankton animals make an ideal source of food. In fact, zooplankton comprise up to 100 percent of the diet of larval fish; without these plankton animals, young fish would starve to death. An adequate food supply of zooplankton is essential to fish larvae

since they must grow rapidly to a size where they are able to escape predation from large aquatic animals. Virtually every type of fish in Virginia depends on zooplankton as the principal food source during its early life stages. Thus, zooplankton are of vital importance to Virginia's anglers; without zooplankton there would be no sportfishing of largemouth bass, striped bass, crappie, or other gamefish since their young could not survive.

About 120 different species of zooplankton have been identified in Virginia's freshwater lakes and ponds. Most of these belong to one of the following four major groups: (1) water fleas (cladocerans), (2) seed shrimp (ostracods), (3) wheel animals (rotifers) and, (4) copepods.

Their life styles are almost as varied as the forms of the creatures themselves, yet they all play an important role in our aquatic ecosystems. Understanding zooplankton and their valuable contributions as indicators of water quality, regulators of algae growth, and as food for fish and other aquatic organisms adds to our awareness of underwater life and appreciation of the benefits derived from these tiny creatures. It's comforting to realize that though we rarely see them, each day billions of zooplankters are working hard to produce healthy sportfish populations, and to keep Virginia's ponds and lakes clean. □

William Kelso is a graduate assistant in Virginia Tech's department of fisheries and wildlife sciences, where Louis Helfrich is an associate professor and fisheries extension specialist.



(Top) Wheel animal, Keratella and (bottom) seed shrimp, Ostracod.

(Top) Wheel animal, Brachionus; (bottom, left to right) Harpacticoid, Calanoid and Cyclopoid, copepods.



Harry Gillam

Bringing Back the American Chestnut

The chestnut blight fungus has infected
American trees since 1909, despite
attempts to control it.

by Joel D. Artman

The range of the American chestnut extends from northern Georgia to Maine. Until 1900, the tree was abundant in Virginia's mountains. And what a tree it was! A rapid grower, the American chestnut produced abundant mast that was highly prized by man, his domesticated stock, and numerous species of wildlife. The wood was unusually resistant to decay and the bark was rich in tannin. Those attributes, along with the wood's beauty, made it applicable for many uses.

In 1909 the chestnut blight fungus was found in American chestnut trees in New York. It probably arrived in this country from Asia on nursery stock of other chestnut species. The fungus found a suitable host in our American chestnut and the new environment was adequate, or even beneficial.

The fungus spreads via two types of spores (seeds). One type is well adapted for short distance movement by rain, birds, insects, etc. The other type is carried mainly by wind and is, therefore, adapted for long distance travel.

While the fungus must enter the tree through a wound, all forest trees are probably wounded to varying degrees. Remember that a wound need not be a massive fire scar. It may also be the minute scratch caused as trees gently rub against each other in the wind. During studies, I have successfully inoculated chestnut where the wound was a single puncture through the bark using a straight pin; it doesn't take much!

Once infection has been successful, the fungus develops rapidly in the host. Cankers form and normally the tree dies above the point of infection. The organism is unable to destroy root tissue. Sprouts develop from the root collar area of a parent tree whose above-ground part has been killed.

It took only 50 years or so for the fungus to spread through the range of the American chestnut. Today there is little to remind us of the magnificent tree that once was so abundant. The sprouts remain, but they too become infected and die, giving rise to new sprouts.

Despite attempts at controlling it, the fungus became well established. Cutting infected trees was unsuccessful because there were too many. Chemicals proved unfeasible since new wounds formed and made the need for reapplication of sprays necessary. Attempts have been and are being made to develop a hybrid with the qualities of the American chestnut as well as resistance to the fungus. Both the Chinese and Japanese chestnuts are resistant, but they are formed like fruit trees. Crosses between each of those trees and the American chestnut have been unsuccessful. Another area of research involves chestnut seed. Here the seeds are bombarded with gamma rays to alter the genetic code to such a degree as to impart resistance, while maintaining original American chestnut characteristics. It is too early to judge the results.

In the late 1930's, the fungus was found in Italy affecting a chestnut species there. Again, attempts to halt its progress failed and those who were concerned braced themselves for what appeared to be a repeat of the problem in the U.S.

Around 1950, however, experts found some atypical (abnormal) cankers on the trees. The cankers encircled the stem, but did not seem to seriously affect the tree. In time, the number of atypical cankers increased and there was a corresponding decrease in typical (normal) cankers. The result was decreased mortality to the affected species in Italy. In 1965, a French scientist, J. Grente, grew the fungus that came from the atypical cankers which by then were widespread. Under the microscope, the fungus appeared to be the same as the one that caused chestnut blight. On the artificial growth medium used in the laboratory, however, the fungus was white in color; the fungus from typical cankers was orange on the same medium.

After much testing, researchers found that the fungus from atypical cankers contained some virus-like agent that greatly reduced its virulence (ability to cause disease.) More important, the agent could be transferred to a strain of the fungus from typical cankers, resulting in a fungus with reduced virulence. Such a fungus, with the decreased ability to cause disease, is termed a hypovirulent (or "hypo"). Numerous hypovirulent strains have been identified. Armed with this new weapon, attempts to control chestnut blight in France were undertaken.

After the necessary compatibility testing, typical cankers were inoculated with the appropriate hypo. The idea was to have the hypo take over the virulent fungus, making it a hypo, and then have the hypo spread by spores to other typical cankers. Numerous such inoculations were made to initially establish the hypo. In groves of chestnuts where the hypos were introduced, chestnut blight ceased to be a problem after about 10 years.

When hypos from Europe were tested on our American chestnut, scientists learned that one hypo did not control all cankers, and that the hypos were not spreading. Natural spread has occurred in France and was the primary reason for that success. Without natural spread, the only alternative would be to treat every canker on every infected tree and then to make sure that all new infections were treated. Such an approach is impossible.

The next tests were conducted by using mixtures of various hypos. This overcame the need to treat each hypo with each virulent strain to prove compatibility. While the hypo mixture worked well in controlling individual cankers, there still was no spread to untreated cankers.

This brings us up to date. Researchers continue to find American hypos and we keep track of the occasional surviving American chestnut trees that we find. All of these older trees are infected, but many continue to live. Perhaps there is some genetic resistance or perhaps one contains a hypo that alone, or in combination with others, may provide the next key in the continuing research directed toward reestablishment of the American chestnut. □

Joel D. Artman is assistant chief for insect and disease investigations at the Virginia Division of Forestry.

Pumpkin Time

by Dorothy Beecher Artes

We tend to think about pumpkins this month and next because we make jack-o-lanterns from them at Halloween, and we bake them in pies for Thanksgiving. What do you know about pumpkins?

The pumpkin is a member of the gourd family, and first cousin to the squash. The pumpkin grows on a vine and has huge, hairy leaves. The vine sprawls every which way and can almost run away with a garden patch; it can sprawl 20 feet or more. The fruit (or pumpkin itself) often grows to great size, which makes one wonder if Peter, the pumpkin eater, did indeed put his wife in a pumpkin shell where he kept her very well. Do you remember that nursery rhyme?

Pumpkins are mentioned in other stories and poems, too. In the story "Cinderella," Cinderella's coach was made from a pumpkin, and was turned back into one on the stroke of midnight. James Whitcomb Riley wrote a poem, "When the Frost is on the Pumpkin," and so did John Greenleaf Whittier, "The Pumpkin." Can you think of any others? And, of course, Halloween stories are written by the dozen.

The pumpkin is a kind of American "ancestor." It was here before the first colonists arrived in America, and was used by the Indians. It was the Indian who experimented with different ways of breeding and planting the pumpkin, to bring it to the form in which we know it today.

Actually, there are two kinds of pumpkins. One is the big orange fellow; the other is straw-colored and is called the cheese pumpkin. The cheese pumpkin is the one used for canned pumpkin sold in stores, and with which many people make their pumpkin pies.

Another reason the pumpkin deserves attention is that roasted pumpkin seeds contain protein, iron and good amounts of B vitamins, as well as vitamins A and C.

Speaking of pumpkin shells, there was once an old law in New Haven, Connecticut. It required that all males have their hair cut round by fitting a cap over their heads. Caps were scarce, so early barbers used hollowed-out pumpkin shells. That's



Gary Gaston

how the old saying "pumpkin head" got started.

If you decide to grow pumpkins, a gardening book can give you details. General rules to remember are: (1) pumpkins will grow almost anywhere that weather stays warm about four months; (2) sow seeds in full sun after danger of frost is over; (3) water regularly and deeply, and; (4) harvest (or pick) before frost.

In a place called Circleville, Ohio, a large pumpkin festival is held every year. Their festival lasts four days and has been held every year since 1903. It is "some pumpkins" of an event! There are bands, parades, shows and dances, and they are all connected with pumpkins.

Stores and schools close to celebrate the festival, and visitors come from miles and miles away to enjoy it. □

Pumpkin Fun

You can hold your own small "pumpkin festival." Here are some ideas:

1. Bake a pumpkin pie using fresh pumpkins.*
2. Roast some pumpkin seeds as a snack instead of popcorn or candy.*
3. Find one or more of the poems or stories mentioned in this article about pumpkins.
4. Write your own pumpkin poem or story.

*Write to us for printed instructions: Growing Up Outdoors, Virginia Wildlife, Box 11104, Richmond, Virginia 23230.

Dove Baiting and the Law

by Richard M. Perry
Game Warden

The fiery sun slowly climbed high above the treetops, while far below, two figures were silently crossing the relative cool of the forest floor. Dressed in camouflage fatigues with sidearms and walkie-talkies strapped to their belts, the two men cautiously made their way to an open field surrounded by woods. They stopped only for a few brief pauses to get their bearings, or to kill the mosquitoes buzzing around their heads. Separating, the two took up positions on opposite sides of the disked field. Settling into place beneath the shadows of the trees and undergrowth, the two waited and watched.

Intrigue? Drama? Hardly; the event occurred during dove season with fellow Game Warden Rex Hill and me. We were assigned to observe a baited dove field.

Unfortunately, this has become a too common occurrence in Virginia. According to Darcy Davenport of the U.S. Fish and Wildlife Service, approximately 150 to 200 persons are arrested annually in Virginia for hunting doves over a baited field.

Bear in mind that shooting doves over bait is "strict liability" and the old adage "ignorance is no excuse" fits justly. The law simply states that the baiting must be a bona fide agricultural practice, and the distribution or scattering of grain or other feed once removed from a field or stored at a field where grown, is illegal. As a hunter, you should be wary of a freshly disked field, and do not be afraid to ask questions or check out the field you are about to hunt.

Don't let yourself get caught in a field such as the one Officer Hill and I were watching. The shooting started at 1:00 in the afternoon; we watched the hunters with binoculars and counted their birds. The eight hunters shot approximately 35 boxes of shells, killing close to 200 birds; the legal limit is 12 per person.



Wildlife Management Area Supervisor David Brime with one hunter's 34 illegal doves.

Our backup team consisted of three officers: game refuge supervisor David Brime and Sgt. Don Montgomery of the Virginia Game Commission, and Darcy Davenport, a federal game warden. After negotiating a locked gate, this team roared into the wheat field by patrol car at the prearranged time, 5:00 p.m. Even though one man yelled, "Game Warden!", only one hunter had time to try to hide his birds. Luckily, I was watching only a

few yards away and recovered 25 birds from the undergrowth. All eight hunters were quickly assembled and the majority of the birds were recovered.

In court, the convictions netted fines ranging from \$100 to \$500, some suspension of hunting privileges, and upon order of the judge, several were required to give conservation talks to groups.

Dove baiting? Be careful: you never know who'll be watching. □

Personalities

by Francis N. Satterlee



Mr. and Mrs. Glenn R. Croshaw.

Glenn R. Croshaw, Commissioner, Second District

Hunting dogs and firearms, fishing tackle and boats are among the earliest recollections that Glenn Croshaw has about growing up. Associated with each of those memories was his ever-present father. He remembers the patience that his father exhibited in spite of a youngster's seemingly endless questions and the love and understanding of the outdoors and wildlife that he shared with his son. "I felt that my dad had a lot more common sense than most people and he constantly impressed upon me the impor-

tance of wildlife, proper sportsmanship and the need to adhere to game and fish laws. I remember also that he always found, or made time, to take me fishing or into the field to share an outdoor experience with him."

Although he was born in Petersburg, when he was very young, the family moved to Colonial Heights in connection with his father's business. "It was primarily a rural community and this tied in nicely with our outdoor activities."

"When I was about eight years old, my dad took me turkey hunting and something happened that revealed to me then, and even more in retrospect, his great quality of patience. He had instructed me that, if he nudged my leg when we were in the blind, that meant for me to be very quiet as there was game approaching. Being young and forgetful, when he did nudge me, I said, 'what do you want?' whereupon he

squeezed my leg to the point that I cried out, 'that hurts!' Naturally, the turkey departed, but my dad never lost his patience, did not scold me, and I learned a valuable lesson.

"One of my biggest thrills was the time when I was 13 and had finally qualified (by my dad's strict standards) to be on a deer stand by myself. That memorable day I killed my first deer and, when the fact dawned on me, I let out a blood-curdling yell. My dad at the next deer stand thought that I had been injured and rushed over to help me, only to find me simply exuberant."

During the summers as a teenager, young Croshaw worked for the Colonial Heights Parks and Recreation Department. After graduating from Colonial Heights High School, he enrolled at East Carolina University at Greenville, N.C., graduating with a degree in business administration. This was followed by law school at the University of Virginia. He then spent a brief period in Washington, D.C. as Executive Director of the State Chairmen Association of the Democratic Committee.

In 1976 he moved to Virginia Beach to begin a law practice in a small two-man firm. Two years later he joined the law firm of Pickett, Lyle, Siegel, Crecher & Croshaw, in Virginia Beach.

In 1979 he married Carolyn Reither from St. Paul, Minnesota. The couple has one son, David, and they make their home in the Bird Neck Point Community of Virginia Beach.

On July 1, 1982 Governor Charles Robb appointed Mr. Croshaw to a four-year term as Commissioner representing the Second Congressional District, which encompasses Norfolk City and Virginia Beach. As an avid hunter and fisherman, he is an active member of numerous conservation organizations, including the National Rifle Association, Ducks Unlimited and the Virginia Wildlife Federation, to mention a few.

Glenn Croshaw is anxious to tell the sportsmen of the Commonwealth that he is looking forward to contributing in whatever way he can to the continuing success of the Commission.

Incidentally, he and his dad still hunt together and the two of them now have been joined by Glenn's son, who, it seems, will benefit from two generations of wildlife experiences. □

The Eastern Box Turtle

by William D. Weekes



For those of us who frequent the outdoors, the eastern box turtle (*Terrapene carolina carolina*) is no stranger. His native habitat is open woodlands, or perhaps in fields not far from the woods. He seems far from water. Some say the females "know" the summer rains will soften the earth—so when such precipitation does arrive, the turtles will emerge to dig egg cavities, or to burrow in some shady spot, just in case another hot, dry spell comes along.

Physically, the eastern box turtle is unmistakable. The creature's dark, domed carapace is flecked with yellow or orange markings and displays a slightly flared margin.

The carapace dome is etched with concentric growth lines. They resemble huge fingerprints, enclosed in box-like furrows. Most sources say one can ascertain age, perhaps up to 15 years, by counting the rings.

The creature's underside, his brownish plastron, is hinged. It resembles a little door which the turtle opens when he wishes to let out head and feet. No man of average grip strength can manually open this "door."

The common box turtle varies in disposition. Some will suddenly withdraw their black, slightly spotted heads and legs at the sight of a human hand. Some boxers hiss when disturbed. Others will extend their necks and wiggle their legs as if trying to fly to freedom.

If the turtle's head and feet remain extended long enough to get a good look, you might notice that some specimens have red eyes (male) and some brown (female), and that their scaly legs are flecked with yellow or orange. The male bears a marked concave plastron, bigger hind legs than the female and curved claws, and the rear opening nearer a thicker tail. Females have straighter and more slender hind claws and a more convex carapace. Males are larger, most between four and a half and five inches long, and weigh between 400 and 500 grams. Turtles mature in five years.

The eastern box turtle is omnivorous, and eats such meats as slugs, snails, insects, and worms, and such herbacious materials as garden vegetables, berries, fruits, and fungi. They also relish mushrooms—apparently being immune from various poisonous varieties. This is why some authori-

ties do not recommend eating this turtle, because the meat may cause illness in humans.

Boxers mate in spring. The female may lay fertile eggs up to three years after a single mating. With early summer, the female selects an open spot, preferably in the sand, digs a nest cavity with her hind feet, lays four or five white eggs and, after two to five hours, leaves them in the sun's warmth to hatch. Incubation takes an average of 87 to 89 days.

The box turtle's longevity is legendary. Two authorities, Archie Carr and Clifford Pope, note that individuals living 40 to 50 years are not unusual, and even an 80-year old is not a rarity. Anything beyond this is exceptional. Both set the upper limits at 123 years of age.

Why such longevity? Simply stated, the box turtle takes care of itself—at least a fair portion of the population apparently possesses a talent for doing so. A turtle, being cold-blooded, makes such care a matter of survival. Poikilothermic creatures do not automatically maintain a constant internal body heat and must devise behaviors designed to protect themselves from temperature extremes. During hot, dry spells they submerge into damp or wet muddy areas, or into moist soil. In winter, they use their forefeet to dig into the ground as deep as two feet.

If the common box turtle successfully maintains a safe body temperature, a long life span is likely. As an adult, the turtle's shell offers more than adequate protection from predators (although turtle eggs are delicacies for the likes of skunk and dog, and hatchlings are devoured by birds such as the crow). However, the turtle shares with the whitetailed deer a most efficient predator: man's merciless extension of himself, the automobile. If the box turtle ever becomes endangered or extinct, it will be the result of his habitat having been swallowed up by man's expanding population needs.

Up-to-date population studies on this species are rare; authorities report the turtle to have a 250-yard diameter home range. Various subspecies of the eastern box turtle enjoy a wide range—taking up much of the area of the Mississippi River east. □

William D. Weekes is a frequent contributor to Virginia Wildlife; he lives in Spartanburg, South Carolina.

An Autumn Adventure

Fourteen women leave families, homes and jobs for a few days of "deliberate living" in Grayson Highlands State Park

by Emily Herring Wilson

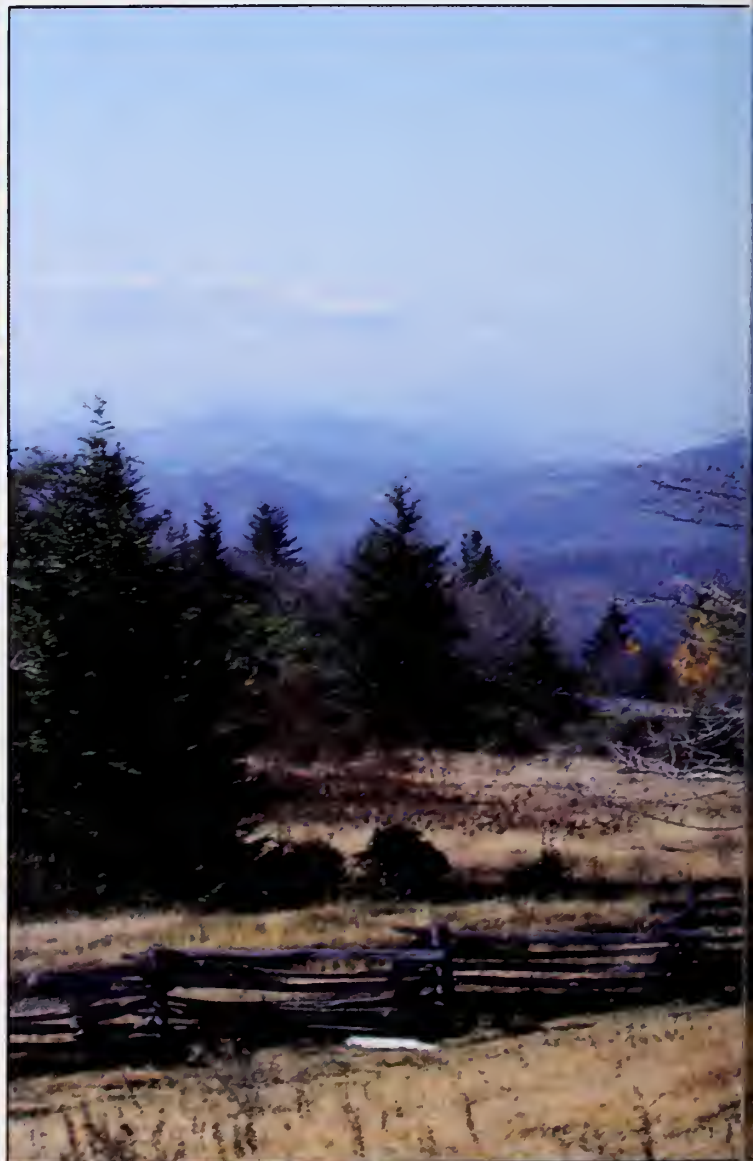
We are fourteen women in a van riding up US 421 past Brushy Mountain Road on an October morning in North Carolina. It is 72 degrees warm, and the sun's shining like a new copper penny. It bounces off the piles of sleeping bags and parkas and tents brightly filling up the corners, our flags of freedom from responsibilities which we have left behind in the city limits of Winston-Salem. Our families will make do on the casseroles from the freezer, our telephones will ring with the hollow sound of absence, and our resolve is as firm as Thoreau's when he entered Walden to live "free and uncommitted." No matter that our escape to Grayson Highlands State Park in southwest Virginia will be for only three days and that our living will not be as Spartan-like as the New England poet's. We are headed for the woods "to live deliberately and to front only the essential facts of life." If Thoreau's advice, "Simplify, simplify," did not include L.L. Bean hiking boots and a nice foam pad to cushion us from the earth tonight, still, we are modern-day naturalists who willingly trade the world of neon for the moon rising over a glowing campfire.

Good friends are convivial, and some of us have been



Joe Goldfus

(Above) "Signs advertise Sourwood Honey and Pumpkins for Sale." (facing page, top) "The best thing about this group is we don't have any officers or by-laws." (center and right) "Along the way, the country takes over. Cornstalks and weeds and the last remaining fall leaves color the landscape. We pass small clapboard houses with smoke curling from the chimneys."



photos by Susan Mullally

friends for a long time and have hiked and camped together for the past eight years. "The best thing about this group," Nancy says, "is we don't have any officers or any by-laws." It is an important distinction for women whose daily lives as wives and mothers are circumscribed, and we enjoy our freedom to ride along on a bright morning with a sudden sense of aimlessness. As we leave the Interstate for a "road less traveled by," we are headed toward earthly glory.

Along the way, the country takes over. Corn stalks and weeds and the last remaining fall leaves color the landscape. We pass small clapboard houses with shining tin roofs and smoke curling from the chimneys. Sumac blazes on the roadbank. Signs advertise Sourwood Honey and Pumpkins for Sale. There's a smell of skunk in the air. The Sulphur Springs Methodist Church near Mouth-of-Wilson, Virginia, is empty now of worshippers; perhaps they lie buried on the hillside or have wandered off to distant cities. Now some practical farmer has turned from the work of God to the work of man and has hung his tobacco in the quiet sanctuary to dry in the season in which all things change and mellow. The presence of a few wispy mare's tail's in the sky overhead



reminds us of weather. And now, with our eyes filled with all of this, we are truly removed from the city. By the time we reach the old rock wall which marks the entrance to the state park, we have been transformed from doers into dreamers.

We roll down the windows, and Lib exclaims, "All this air!"

After we eat our bag lunches in the sun and set up the tents (now we are expert as any Scouts), we are ready to explore. The park has provided well-kept camp sites and a large restroom with a hot shower; the latter is luxury, indeed. The trails are marked, and there are attractive signs with

information about Haw Orchard Mountain, Massies Gap, Rhododendron Trail, and Quebec Branch. We agree to make our first walk along Wilson Creek Trail, which is 1.8 miles and begins near the campground. No one puts it to a vote; we just amble along agreeably behind one another. Almost as soon as we have entered the woods, where light is softened, the path begins to descend, gradually enough for a leisurely walk.

We group together in two's and three's as Margaret looks for walnuts which she will boil out for dye for basket straw, and Emily scratches under leaves to identify mosses. If I moved from one group to another, I would discover that each woman has a special interest: one knows the wildflowers; another knows trees, one knows the history of the Appalachian Trail, which we cross; Peggy is especially attuned to water—she has spent years of her life helping to save the New River from a power dam. "Is this a buckeye leaf?" someone calls out. Jane moves up to see: "Bound to be," she says. Someone shouts from the bottom, "Now here's something you don't see too often," and we all gather to admire the mountain ash, brilliantly ornamented with red berries like Christmas. We reach the creek and a sunny clearing; leaves float on the surface of a deep, clear pool. We scramble up rocks and rest. No one pushes the other, no one insists on being first (though it is true that Emily Glaze usually is). Whatever our differences may be—political, social, religious—there is a certain etiquette of hiking which invites harmony. Walk, look, wait, be among friends.

Later, one group decides to go on further to another trail, and some of the women drift back to the campsite. By day's end, we are together again, and the food is being unpacked and prepared, a fire is going under the grate, and heavier jackets are brought out for the quickening cold air now settling upon the evening. After hot dogs and donuts and coffee, we sit around the fire, the dark comes, and someone thinks of the old songs. "In the Evening by the Moonlight," "Smoke Gets in Your Eyes," "I'm Forever Blowing Bubbles," "You Are My Sunshine," and at just the right time, "Harvest Moon." Indeed, the moon is full, and it blazes with a mystery which silences the last remembered tunes. The stars are out, and the moon is rising in the trees.

As the women tent-down for the night, I think of who we are. Fourteen women past 40 who live in the city, where (frittered by detail, Thoreau would say) our busy lives include community work and families. Others join us for different trips, made twice a year in fall and spring. The costs range from \$3 to \$8 per person. The group we have this weekend, in addition to myself and Susie Mullally, the photographer, includes: Dot, a veterinarian in practice with her husband; Vaughan, Fran, and Jane, who work as community volunteers in the Good Samaritan Soup Kitchen sponsored by their church; Nancy, who teaches chemistry at the medical school; Emily, who writes a column on gardening for the newspaper; Lib, who is a copy editor; Betsy, who is a counselor at the Battered Women's Shelter; Peggy, who is an ardent conservationist and community activist; Joan, who recently finished college after raising a family; Emalyn, whose field is antiques and who makes beeswax candles famous among her friends; Margaret, who makes baskets and tends a lovely wildflower garden. All are wives and mothers. None is a vocal member of the feminist movement, but each speaks her own mind. The public issue which unites us most often is the

environment. The cause for clean air and rivers and open spaces is not one which these women take lightly, not a novelty for our attention, as cynical critics might accuse us. We not only know the laws governing public spaces, but we have been there, hiked the trails, floated down the rivers, stood on the mountain tops.

The group began informally—has remained informal—when two or three of the women talked about their interest in going backpacking. A few were seasoned campers and hikers with their families, but many of us had never carried a 35-pound pack and didn't know the language of trail markers. We assembled our equipment, often borrowed from sons and daughters, and learned how to set up camp, either in a designated site or on the trail. Over the years other women joined the group as word spread of our adventures—which included some rugged climbing and snow and sleet. Our trips have included hiking the Boulevard from Newfound Gap to Mt. Le Conte; Cade's Cove in the Smokies where we studied wildflowers; rafting on the Nantahala River; a swamp trip to Merchant's Mill Pond in eastern North Carolina; a 10.6 mile hike on the Appalachian Trail from Carver's Gap to Pink Winter's; Shining Rock Wilderness in Pisgah National Forest, where we saw a hemlock forest, and the hiking was hard and steep. Our favorite places are in the Smokies, and we know the region almost as well as we know our own hometowns; one of our delights is studying the relief map at the Ranger's Station at Sugarlands to see just where we have been. *Strangers in High Places* by Michael Frome is our bible, and we have followed the early explorations of Horace Kephart as if he were an old friend. Say "Smokey" to any of us, and we start looking at the calendar for our first free days.

At Grayson Highlands, to return to our present trip, we walk and climb and look and make it to the top of Mt. Rogers, the highest peak in Virginia (we had to turn back on an earlier attempt when we woke up to snow, in May). To reach the summit, we climb 4.5 miles from Massies Gap across a field and over a stile and wander along the old wagon road, past Sullivan Swamp and the rocks and meadows of Wilburn Ridge. At the top, there is a forest of spruce-fir. We have made it, a triumph perhaps greatest of all for Nancy, whose legs have been weakened by multiple sclerosis and whose energy is boundless. We turn to see her radiant smile. Yes, and "the last shall be first." It is a simple sign of our well being. No one feels compelled to make a speech. This is a time and a place to simply *be* in the presence of a great and wondrous world.

There are more trips ahead of us—Mt. Mitchell, the highest peak in North Carolina is next. Some want to backpack; others will settle for the conveniences of campsites. We agree that we can accommodate everyone's preferences. Perhaps, though we do not have to say, nature has taught us to live together, for the weed and the spruce both receive the sun. We take home renewed all that we are—women, nurturers, workers, dreamers—and driving back down the mountain, we are ready again to return to the city and our other lives.

"Only that day dawns to which we are awake," Thoreau writes at the conclusion of his experiment at Walden. "There is more day to dawn. The sun is but a morning star." □

Emily Wilson and Susan Mullally of Winston-Salem have collaborated on a number of photo-essays, including a book scheduled for publication next spring.

Hunters Needed For Quail Study

In 1977 the Virginia Commission of Game and Inland Fisheries began its Quail Status Study. Since then, extensive data have been compiled on quail and quail hunters. Reports on over 14,000 bobwhite taken have been submitted by cooperating hunters. Over 13,000 individual birds have been aged from wings sent in. Information from completed wing envelopes and aging based on wing feather molt has resulted in the most far reaching effort ever in this state to gain information on the status of the bobwhite. Having a knowledge of hunter success and quail production is essential to good management. It is the quail manager's yearly "financial statement."

This is an ongoing and expanding study. In addition to hunter success and overall juvenile production, hatching for birds less than 150 days old have been established. This is done each year and for each climatic division of Virginia. Underway now is an effort to relate quail survival and production with weather factors. With every phase of the study, each year's data gives added meaning to that of each previous year.

The most important person in this project is the cooperating hunter. Initially, game wardens in each county contacted

and involved three quail hunters as cooperators. Over the past five years, the number of cooperators has declined. It is essential that an adequate number of hunter reports and wings be submitted to make the information meaningful. Additional cooperators are now needed.

Statewide, the sample size has been sufficient. However, on a climatic division basis, only the tidewater and eastern piedmont have supplied adequate samples. Additional cooperators from these areas would be useful. The greatest need for more cooperators is from the western piedmont and northern division. It appears from past experience that the central and southwest divisions would not produce enough of a sample size to be useful.

One need not be an everyday or consistently successful quail hunter to be a valuable cooperator. The submitting of a complete envelope following each hunt, whether successful or not, is equally important to the study.

If you would like to become a cooperator please write: Research Office, Commission of Game and Inland Fisheries, P.O. Box 5471, Charlottesville, Virginia 22905. You will be supplied with wing envelopes and additional information prior to the hunting season. □



Hoffman Wins Award

Dr. Allan A. Hoffman of Danville, who represents the Fifth Congressional District on the Commission of Game and Inland Fisheries, recently won the Exchange Club's "Distinguished Virginian Award" for 1981.

Nominated by the Exchange Club of Danville, Hoffman has been active politically, civically and medically in both Danville and the state of Virginia for more than 10 years.

Hoffman has been a Commissioner since 1973. He is on the Advisory Committee on Fisheries Science, School of Forestry and Wildlife Resource at Virginia Tech, and a member of the Governor's Council on the Environment. He also has been a member of the Board of Directors of the Roanoke River Basin Association, a director of the Virginia Wildlife Federation, a member of the Conservation Council of Virginia and also serves on the board of directors of the conservation council foundation.

His civic activities include past membership on the Danville School Board, current membership on the board of trustees of Carlisle School in Martinsville and past president of the Virginia Pilots Association. □

"Virginia Wildlife" Is 1st!

Virginia Wildlife was recently awarded first place for outstanding magazine writing and editing by the International Association for Conservation Information (ACI). The coveted award was made at the Association's annual meeting in Juneau, Alaska and accepted by editor Harry Gillam. □



Environmental Education to Meet At Skyland

The Virginia Association of Environmental Educators will meet at Skyland in Shenandoah National Park November 5 and 6. The keynote speaker will be Sheila Prindiville, Administrator of the Council on the Environment. Dr. Mitchell Byrd from the College of William and Mary will give a report on eagle and peregrine falcon restoration efforts funded by the Virginia Game Commission. Dr. Tim Tigner of the Virginia Division of Forestry will give a report on the gypsy moth expected to radically alter Virginia's hardwood forests in the next few years.

Other items on the program include Uranium Mining in Virginia, Residential Environmental Educator Centers, Environmental Education Games and Nature Hikes. Many of these sessions will run concurrently, allowing participants to choose between two or more topics.

Special package prices including four meals and lodging are \$62.61 single, \$46.49 double, and \$41.12 triple. Reservations must be made through Skyland by October 22. The phone number is (703) 743-5108.

The Virginia Association for Environmental Education is made up of educators, and persons from government and business involved in education. □

Free Trapping Course Offered by Commission

The Virginia Trappers Association, in conjunction with the Virginia Game Commission, will be conducting trapper education clinics across the state this fall. The six-hour course is designed to teach and promote trapper ethics, trapping law, conservation, basic humane trapping methods and proper fur handling.

Upon completion of the course, students will take a test and if successful, will be awarded a trapper's certificate and a trapper's education patch.

Trapping has been under constant attack in recent years, and the Virginia Trappers Association and Commission personnel have put their resources together to educate Virginia trappers. Those interested in taking the free course can contact either of the men listed below for further details and a schedule of clinics to be held:

Don Shumaker
State Coordinator, Trapper Education
10608 Hamilton Rd.
Glen Allen, Va. 23060
Phone—804/262-8091

Jeffrey M. Curtis
Virginia Game Commission
4010 West Broad St.
Richmond, Va. 23230
Phone—804/257-1000

Trapping clinics will be advertised locally. Parents are encouraged to attend and bring young trappers. □

New Boone and Crockett Records Book

Some words and phrases have particular meaning to outdoorsmen. Very few hunters have to be told that "Model 12" refers to a particular model shotgun manufactured by Winchester. In the same way, nearly every big game hunter understands the initials "B&C" to mean records book of animals and the organization that sponsors the records for native North American big game, the Boone and Crockett Club. Beginning with its first records book in 1932, the Boone and Crockett Club has become recognized as the official source of such data. Its copyright scoring system is the only universally accepted system for native North American big game.

The eighth edition of *Records of North American Big Game* was published in late 1981. It records data for nearly 7,000 individual trophies in 31 categories. Selected measurements are shown, along with kill location, date, and the name of the hunter and/or owner for each. Five new world's records are shown, the categories of black bear, Alaska-Yukon moose, pronghorn, muskox, and mountain caribou.

In addition to the trophy data sections, a dozen chapters offer insight into subjects related directly to big game and hunting. For example, there is a chapter on black bear and human interactions in Michigan, and one on the everyday life of whitetail deer. Other chapters deal with such subjects as the past books of the Boone and Crockett Club, sport hunting and federal laws, and an in-depth history of the National Collection of Heads and Horns.

One interesting chapter tells the hunting stories behind the new world's records. However, the most memorable story is not about a new world's record, but rather the story of how a decision was reached to list James Jordan as the hunter for the long standing world record typical whitetail deer. The story reads like a "whodunit," with Jordan shooting the deer in the very early part of this century, but becoming disassociated with his trophy until the mid-1960's. Success in his quest to become recognized for his hunting achievement would take nearly two decades longer.

It all adds up to a must book for the serious hunter and outdoorsman. The records books are published on approximately a six-year cycle, meaning that the current one will be the official source for settling arguments until 1987.

Collectors will want to take note of the fact that there is a specially produced limited edition version of the records book. It is larger in size than the regular edition and is bound in a rich brown leather with gold stamping. Pages are of acid free paper, gilded in gold on all three sides. It has a bound-in ribbon marker and comes in its own specially designed slip case. It is limited to 750 copies, each signed and numbered by the book editors and the Club president. The price is \$195.00 plus \$5.00 shipping. It is likely to be a good investment, like fine guns, appreciating well over time.

The regular edition of the records book is \$29.50 plus \$2.00 shipping and handling. There is a multiple copy discount of 10% for orders of two or more copies. Shipping and handling for additional copies is \$1.00 per book. It can be found in many book stores or can be ordered directly from the Boone and Crockett, 205 South Patrick Street, Alexandria, VA 22314. □

Moving?

Don't forget to let us know!

Among all those details that you have to attend to when you're moving from one home to another, don't neglect to let *Virginia Wildlife* know your new address.

If you're moving soon (or have recently moved), please attach your most recent address label from *Virginia Wildlife* on the form below, and then write the new information in the blanks provided.

Home is where *Virginia Wildlife* is—don't miss a single issue, no matter where you are!

New Address _____
City _____ State _____ Zip _____
Effective Date _____

Attach most recent address label here.

James Watt to Speak at VWF Banquet

Secretary of the Interior James B. Watt is on tap as the speaker at this year's Virginia Wildlife Federation 17th Annual Awards Banquet, October 16 in Richmond. The banquet begins at 6:00 pm. and takes place at the Holiday Inn at 3200 West Broad Street. Tickets are available for \$17 each and must be ordered in advance using the form on this page. Return your order and check (payable to VWF) to: VWF, 4602D West Grove Ct. Virginia Beach, 23455. (Hotel reservation should be made separately with the Holiday Inn.) □

VIRGINIA WILDLIFE FEDERATION SEVENTEENTH ANNUAL AWARDS BANQUET

6:00 P.M., October 16, 1982
Holiday Inn, 3200 West Broad St.
Richmond, Va. 23230

My check for \$ _____ is enclosed for _____ tickets \$17.00 each. Make check payable to Virginia Wildlife Federation. All tickets must be ordered by October 8. No tickets will be sold at the door.

Name _____
Address _____
City _____
State _____ Zip _____



You can be sure to catch more on the pages of *Virginia Wildlife*!

Catch the big savings on the per-copy price of *Virginia Wildlife* when you buy it "by the dozen." You'll get a 65% savings on the best how-to, where-to and when-to outdoor magazine Virginia has to offer! Mail the form below to *Virginia Wildlife*, P.O. Box 11104, Richmond, Virginia 23230, or give it to your game warden.

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Game Law Summary

Here are a few of the rules and regulations you need to know before you take to the field.

Quick—what's opening day of bear season in Albemarle County?
If you wanted to know that date, or any of the other hunting regulations in Virginia, where would you find the information?

Most of your questions—bag limits, season dates, special county regulations—are answered in one or more of the pamphlets published annually by the education division of the Commission of Game and Inland Fisheries. The *Game Law Digest* highlights regulations concerning deer, bear and turkey, trapping, small game, firearms, as well as special regulations for certain areas of the state (such as military areas). Two supplements outline specific laws concerning migratory game birds and waterfowl.

Although the Game Commission makes every effort to make this information available to the public, it is the responsibility of every hunter to learn the regulations which apply to him: ignorance of the law is not a defense for violators.

Excerpts from the *Game Laws* and the migratory game bird supplement appear on these two pages.

TURKEY

Turkeys are to be hunted with non-electric callers. Dogs and organized drives are prohibited in spring season.

1. **One per day, two per license year, one may be a hen in the fall.** *November 1-December 31.* In Albemarle, Alleghany, Amelia, Amherst, Appomattox, Augusta, Bath, (except Gathright WMA), Bedford, Bland, Botetourt, Brunswick (except Ft. Pickett), Buckingham, Campbell, Caroline, Carroll, Charlotte, Clarke, Craig, Culpeper, Cumberland, Dinwiddie (except Ft. Pickett), Essex, Fairfax, Fauquier, Floyd, Fluvanna, Franklin, Frederick, Grayson, Giles, Goochland, Greene, Halifax, Hanover, Henry, Highland, King & Queen, King William, Loudoun, Louisa, Lunenburg, Madison, Montgomery, Nelson, Nottoway, (except Ft. Pickett), Orange, Page, Patrick, Pittsylvania, Powhatan, Prince Edward, Prince William, Pulaski, Rappahannock, Roanoke, Rockbridge, Rockingham, Russell, Scott, Shenandoah, Smyth, Spotsylvania, Stafford, Tazewell, Warren, Washington, Wise and Wythe Counties. (See Special Seasons for exceptions).*

2. **One per day, two per license year, one may be a hen in the fall.** *November 1-November 13.* Charles City, Chesterfield, Greensville, Middlesex, New Kent, Prince George, Sussex, and York Counties.

3. **Closed to fall turkey hunting.** In Accomack, Buchanan, Dickenson, Gloucester, Henrico, Isle of Wight, James City, King George, Lancaster, Lee, Mathews, Mecklenburg, Northumberland, Richmond, Southampton, Surry, Westmoreland Counties, and the cities of Chesapeake, Hampton, Newport News, Suffolk, and Virginia Beach

and on the Gathright Wildlife Management Area (See Special Seasons for exceptions).*

SPRING GOBBLER SEASON. *April 10-May 14 statewide.* One half hour before sunrise until 11 a.m. each day. **BAG LIMIT:** One bearded bird per day, two per license year in all counties. Yearly bag limit to include fall and spring season combined.

BEAR

BAG LIMIT: One per license year, at least 100 pounds live weight or 75 pounds dressed weight (all entrails and internal organs removed). Females with cubs may not be killed.

1. *November 22-January 1.* In Albemarle, Alleghany, Amherst, Augusta, Bath, Bedford, Botetourt, Craig, Greene, Highland, Madison, Nelson, Page, Rappahannock, Rockbridge, Rockingham, Shenandoah and Warren Counties. (Dogs not permitted from November 15-27; see "Hunting with Dogs.")

2. *November 1-January 5.* In Bland, Giles, Grayson, Montgomery, Pulaski, Smyth*, Tazewell*, Washington*, and Wythe (no dogs from November 19-December 1). *Except Clinch Mountain & Hidden Valley Wildlife Management Area.

3. **Closed.** In Accomack, Amelia, Appomattox, Brunswick, Buchanan, Buckingham, Campbell, Caroline, Carroll, Charles City, Charlotte, Chesterfield, Clarke, Culpeper, Cumberland, Dickenson, Dinwiddie, Essex, Fairfax, Fauquier, Floyd, Fluvanna, Franklin, Frederick, Gloucester, Goochland, Greensville, Halifax, Hanover, Henrico, Henry, James City, King and Queen, King George, King William, Lancaster, Lee, Loudoun, Louisa, Lunenburg, Mathews, Mecklenburg, Middlesex, New Kent, Northampton, Northumberland, Nottoway, Orange, Patrick, Pittsylvania, Powhatan, Prince Edward, Prince George, Prince William, Richmond, Roanoke, Scott, Southampton, Spotsylvania, Stafford, Surry, Sussex, Westmoreland, Wise and York Counties, in the Cities of Hampton, Newport News, Virginia Beach and on the Hidden Valley Wildlife Management Area in Washington County.

4. *December 6-December 17.* Russell County and Clinch Mountain Wildlife Management Area.

5. *October 1 November 30.* In the cities of Chesapeake and Suffolk east of the Dismal Swamp line.

6. *November 10-January 5.* In Isle of Wight County and the City of Suffolk west of the Dismal Swamp line.

DEER

1. **One per day, two per license year, either sex on the last two hunting days only.** *November 15-27.* In the counties of Franklin (except on Philpott Reservoir), Henry (except on Fairystone Wildlife



Gary Gaston

Dove hunters took to the fields on September 4th at noon.

Management Area and Philpott Reservoir) and Patrick (except on Fairystone Park, Fairystone Wildlife Management Area and Philpott Reservoir).

2. **One per day, two per license year, either sex on the last six hunting days only.** *November 15-January 5.* In the counties of Accomack (except on Chincoteague National Wildlife Refuge and Parramore Island), Albemarle, Amelia, Appomattox (except on Buckingham—Appomattox State Forest), Buckingham (except on Buckingham—Appomattox State Forest), Caroline (except on Ft. A.P. Hill), Charles City, Charlotte, Chesterfield (except on Presquile National Wildlife Refuge), Culpeper, Cumberland (except on Cumberland State Forest), Dinwiddie (except Fort Pickett), Fluvanna, Gloucester, Goochland, Halifax, Hanover, Henrico, James City, Louisa, Lunenburg, Mecklenburg, Nelson (east of Rt. 151), New Kent, Northampton, Nottoway (except on Fort Pickett), Orange, Powhatan, Prince Edward (except on Prince Edward State Forest), Prince William (except on Harry Diamond Laboratory and Quantico Marine Reservation), Spotsylvania, Stafford (except on Quantico Marine Reservation), and York (except on Camp Perry, Cheatham Annex and Naval Weapons Station), in the cities of Hampton (except on Langley Air Force Base), Newport News (except on Fort Eustis).

3. **One per day, two per license year, either sex last three hunting days only.** *November 15-27.* In the counties of Amherst, Bedford, Campbell (west of Southern Railroad), Nelson (west of Route 151), and Pittsylvania (west of Southern Railroad).

4. **One per day, two per license year, either sex the last day only.** *November 15-27.* In the counties of Alleghany, Augusta, Bath, Bland, Botetourt, Carroll, Clarke, Craig, Floyd, Frederick, Giles, Grayson, Highland, Montgomery, Page, Pulaski, Roanoke, Rockbridge, Rockingham, Shenandoah, Smyth (except Clinch Mountain Wildlife Management Area), Warren and Wythe.

5. **One per day, two per license year, either sex during the last 12 hunting days only.** *October 1-November 30.* Suffolk-east of the Dismal Swamp line (except in Dismal Swamp NWR), and in the cities of Chesapeake (except in Dismal Swamp NWR), and Virginia Beach. *November 10-January 5.* In Isle of Wight and Suffolk west of the Dismal Swamp line. *November 15-January 5.* In Brunswick, Essex, Fauquier, Greensville, King and Queen, King George, King William, Lancaster, Loudoun, Middlesex, Northumberland, Rappahannock, Richmond, Southampton, Surry, Sussex, Westmoreland.

6. **One per day, two per license year, either sex.** *November 15-January 5.* In the county of Fairfax, and on Parramore Island.

7. **One per day, one per license year, bucks only.** *November 15-27.* In Lee, Russell, Scott, Tazewell, Washington and Wise.

8. **Season closed.** It shall be unlawful to hunt deer at any time in the counties of Arlington, Buchanan, Dickenson and Fairfax** (in that section closed to all hunting).

9. **One per day, two per license year, either sex the last two**

hunting days only. *November 15-January 5.* In the counties of Greene, Madison, Mathews, Prince George. (No dogs during the first 12 days in Madison and Greene).

10. **One per day, two per license year, either sex on the last three hunting days.** *November 15-January 5.* In Amherst (east of Rt. 29), Campbell (east of the Southern Railroad), Pittsylvania (east of the Southern Railroad), Fort Pickett and Fort A.P. Hill (non-impact area).

*These sections appear in the complete *Game Law Digest*.

**Hunting in Fairfax County restricted to certain parcels of land by police permit only.

MIGRATORY GAME BIRDS

DOVES:

SEASON: *September 4 - October 30*—Hunting permitted from 12 o'clock noon until sunset each day.

December 20 - January 1—Hunting permitted from one-half hour before sunrise until sunset each day.

BAG LIMIT: 12 per day, 24 in possession.

WOODCOCK:

SEASON: *November 1 - January 4.*

BAG LIMIT: 5 per day, 10 in possession.*

HOURS: from one-half hour before sunrise until sunset each day.

SNIPE:

SEASON: *October 18 - January 31*

BAG LIMIT: 8 per day, 16 in possession.*

HOURS: From one-half hour before sunrise until sunset each day.

RAILS:

SEASON: *September 11 - November 19.*

BAG LIMITS: A total of 15 clapper rails and king rails counted together a day, 30 in possession* and 25 sora and Virginia rails, counted together a day, 25 in possession.*

HOURS: From one-half hour before sunrise until sunset each day.

SPECIAL FALCONRY SEASON:

DOVE, WOODCOCK, RAIL

SEASON: *September 20 - December 6, December 20 - 30.*

SNIPE

SEASON: *October 18 - January 31*

BAG LIMIT (all falconry): 8 per day, 16 in possession.*

HOURS (all falconry): From one-half hour before sunrise until sunset each day.

*Possession limits apply to transportation of game killed on more than one day

To receive your own copy of the *Digest* and/or either of the supplements, write to: Game Laws, Education Division, Box 11104, Richmond, Virginia 23230. Be sure to specify which of the three publications you want. □

Bird of the Month



The Shoveler: The Duck With the Funny Bill

The shallows of the marsh slough were alive with ducks swimming briskly with heads half submerged. In one portion of the slough I counted a circular cluster of 28 ducks "slushing" around in the water as they swam in a circle. They fed vigorously on particles of food kicked up by the paddling feet of their companions. Sometimes individuals would spin first one way then back, accomplishing the same thing for themselves. These are the common feeding procedures of one of the most unusual of Virginia's ducks: the "duck with the funny bill," the shoveler.

Shovelers are fairly easy to identify, although they are occasionally mistaken for mallards, due to the drake's dark green head and the hen's similar overall appearance to the hen mallard. However, upon closer examination, we see very little resemblance. The shoveler is a rather small duck with a short-necked, long-winged appearance. The drake's dark green head, chestnut-red belly and sides, and a white chest are distinctive. The female is basically grayish-buff in color with markings of dark brown and a light, buff belly. It has a dark crown and eye stripe on a streaked and spotted head. Both sexes have light blue shoulder patches with black and green speculums—similar to the blue-winged teal. Both sexes have bright orange legs and feet.

By far the most distinctive feature of the shoveler is its large, spoon-like bill. The bill is large and widens at the end. It has pronounced, comb-like "teeth" called *lamellae* along the edges of its upper and lower mandibles. These "teeth" are specially designed to feed in bottom debris or on the surface since they can strain out food particles. The roof and tongue of its bill have sensitive nerve endings which enable the shoveler to touch and taste microorganisms amid mud and other debris. This unique bill makes the shoveler a most efficient surface feeder. The shoveler swims with its head half in the water, takes in small particles, tastes them, then sifts out the unwanted particles (non-food items) through the lamel-

lae. The shoveler's intestine is elongated, which apparently aids in proper digestion of its unusual food. Actually, most of the shoveler's diet is like that of other ducks, although it leans a little more toward animal matter. Aquatic insects and larvae, leeches, mollusks, crustaceans and fish make up one-third of its diet while aquatic plants and seeds make up the majority. Their bill's shape and feeding habits have given rise to local nicknames such as spoonbill, spoony, loffel-ente (spoon duck), mud duck, scooper, shovel bill and spoon-billed teal. Its scientific name *Spatula* is Latin, meaning spoon, and *clypeata*, meaning shield; both words allude to the shape of the bill.

Normally the shoveler is a warm weather duck, leaving the north by the end of October and not returning in spring until the last edging of ice has melted—usually by mid-April. It begins leaving its wintering grounds in late February or early March, reaching the northernmost limits of its breeding range in May, depending on weather and conditions. Shovelers migrate in small flocks, visiting sloughs, marshes, ponds, slow-moving creeks or flooded croplands.

Shovelers sit low on the water with bill pointing downward at an angle. As are all puddle ducks, the shoveler is capable of flying directly into the air and when startled, it flies erratically—somewhat like teal—and is prone to sudden downward maneuvers. Ordinarily, it flies steadily, directly, and rather slowly. Even in flight, it seems to carry its head and neck on a downward slant, although its oversized bill may just give that appearance. In flight, its wings seem to be set back on its chunky body and they are noticeably pointed.

As they migrate toward their breeding grounds (and once they reach them), the shovelers perform a series of courtship displays, both in the air and on the water. Sometimes a group of drakes will chase a single hen through the air on a twisting, dipping, circling, erratic flight. On the water, drakes go through much head stretching and bill jerking in trying to impress the hen. Once she makes her choice, the ritual is often ended with a series of bows and bill dipping. Some sources indicate that the hen will often mate with another male after pairing off, with no apparent concern by the drake. However, I've seen drake shovelers fly at

each other with great ferocity while courting, trying to drive intruders off.

Shovelers favor the grasslands and prairie sloughs for nesting habitat. The nest location is frequently in the grasses away from water, but wet grassy slough edges are favored. The nest is normally a hollow in old flattened grasses, lined with grass and other vegetation, and edged with down. Anywhere from six to 14 pale, olive-buff eggs are laid. While the hens are incubating the eggs, the drakes go to moult, usually where there is an undisturbed area with open water and plenty of protective cover on the edges. They go into a stage called eclipse and resemble the females at this time, but they don't lose their chestnut belly patch entirely. Their moult is quite protracted and the drakes do not regain full or winter plumage until December at the earliest. When shoveler ducklings hatch, they could pass for any other kind of duckling. After 10 days or so, however, the distinctive spatula-shaped bill reveals whose young they are.

Shovelers are among the most widely distributed of all ducks. They and their counterparts inhabit all the continents of North America, Europe, Asia, Africa, South America, and Australia. In Europe and Asia, the shoveler breeds from the Arctic Circle south to France, Turkey, Mongolia and Japan migrating to Africa, Ceylon and the Philippines. In North America it breeds from Alaska and MacKenzie Province east to Hudson Bay and south to around the Great Lakes and north central states. They are most numerous in the Central and Pacific flyways.

Their main wintering range in North America is in the southern states and Mexico, where they inhabit shallow inland waters. There is one particular population of shovelers that migrates 2000 miles from Alaska to the Hawaiian Islands.

Most shovelers taken by hunters are usually shot incidentally to hunting other ducks. They are small, weighing about a pound or so, and their flesh is rated only fair to good. They decoy readily and have the suicidal habit of circling and returning to the decoys even after having been shot at.

Back Bay and the Hog Island Wildlife Management Area hold numerous wintering shovelers—the unusual, interesting duck with the funny bill. □

